MUNICIPAL STORM WATER NPDES PERMIT MI0053902
FISCAL YEAR 2023-2024 ANNUAL REPORT
FOR
THE UNIVERSITY OF MICHIGAN

ANN ARBOR, DEARBORN & FLINT CAMPUSES
& OTHER REGULATED U-M PROPERTIES

UPDATED PER THE REQUIREMENTS OF NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT (NPDES) FOR DISCHARGE OF STORM WATER TO SURFACE WATERS FROM A MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

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For clarification purposes, the following acronyms/definitions are used throughout this report:

AEC	UMAA Architecture, Engineering and Construction
ARC	Alliance of Rouge Communities
BMPs	Best Management Practices
CCRB	Central Campus Recreation Building located on the UMAA campus
CGS	Custodial & Grounds Services
City	The City of Ann Arbor, Dearborn or Flint, as appropriate
CPP	Central Power Plant
CSEP	Computer Science, Engineering, and Physics Department on UMF campus
CSW	Construction Storm Water Runoff Control
DPS	Department of Public Safety on the UMD and UMF campuses
DPSS	Division of Public Safety & Security on the UMAA campus
EAAMC	East Ann Arbor Medical Campus
EIC	The Environmental Interpretive Center on UMD campus
EHS-AA	Environment, Health & Safety Department – Ann Arbor
EHS-D	Environmental Health and Safety Department – Dearborn
EHS-F	Environment, Health, and Safety Department – Flint
EP3	Environmental Protection & Permitting Program within EHS-AA
EGLE	Michigan Department of Environment, Great Lakes, and Energy
F&O	Facilities and Operations
FOTR	Friends of the Rouge River
FRWC	Flint River Watershed Coalition
GIS	Geographical Information System
HAZWOPER	Hazardous Waste Operations and Emergency Response
HMM	Hazardous Materials Management within EHS-AA
HRWC	Huron River Watershed Council
HHW	Household Hazardous Waste
IDEP	Illicit Discharge Elimination Program
Illicit Connection	A physical connection to the drainage system that 1) primarily conveys illicit discharges into the drainage system or 2) is not authorized or permitted by the local authority (where a local authority requires such authorization or permit).
Illicit Discharge	Any discharge or seepage that is not composed entirely of storm water into the drainage system, except for discharges specified in Parts I.A.1.b. and c. of the permit. Illicit discharges include dumping of motor vehicle fluids, hazardous wastes, grass clippings, leaf litter, domestic animal wastes, litter or unauthorized discharges of sewage, industrial waste, food services wastes, or any other non-storm water waste into the drain system.
LTP	Logistics, Transportation & Parking
MHI	Middle Huron Initiative
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
NREPA	State of Michigan Natural Resources Environmental Protection Act, Act 451

OCS	Office of Campus Sustainability (OCS) associated with UMAA
Outfall	A discharge point from an MS4 directly to surface waters of the state
P2	Pollution Prevention
P2/GH	Pollution Prevention/Good Housekeeping for Municipal Operations
PCSW	Post-Construction Storm Water Control
PEP	Public Education Program
Permit	The NPDES Storm Water Permit Number MI0053902 issued by EGLE to the U-M, effective October 1, 2001
PIP	Public Involvement and Participation
PIPP	Pollution Incident Prevention Plan
PPE	Personal Protective Equipment
PSA	Public Service Announcement
RCRA	Resources Conservation and Recovery Act
SEMCOG	Southeast Michigan Council of Governments
SESC	Soil Erosion and Sedimentation Control
SPCC	Spill Prevention and Countermeasure Control
SWMPP	Storm Water Management Program Plan prepared for the Permit and approved by EGLE
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
U-M	The University of Michigan, Ann Arbor, Dearborn & Flint
UMAA	The University of Michigan Ann Arbor Campus
UMD	The University of Michigan Dearborn Campus
UMF	The University of Michigan Flint Campus
UMPD	U-M Police Department, within the U-M DPSS
University	The University of Michigan, Ann Arbor, Dearborn & Flint
U-M SEAS	University of Michigan School for Environment and Sustainability
US EPA	The United States Environmental Protection Agency

THE UNIVERSITY OF MICHIGAN
MUNICIPAL STORM WATER NPDES PERMIT MI0053902
FISCAL YEAR 2023-2024 ANNUAL REPORT

In accordance with Part I, Section C.1.c of National Pollutant Discharge Elimination System (NPDES) Permit MI0053902, the University of Michigan (University; U-M) is required to submit an annual report describing the status of compliance with permit conditions associated with the storm water management program. This program is a requirement of the NPDES Permit issued by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) Surface Water Quality Division on October 1, 2001. This report covers the period July 1, 2023 through June 30, 2024, and follows the format identified in the permit.

1) Compliance Assessment

a) Describe the status of compliance with permit conditions.

The U-M is in compliance with the Storm Water Management Program Plan (SWMPP) for the Ann Arbor (UMAA), Dearborn (UMD), and Flint (UMF) campuses, as revised in May 2010 and approved by the EGLE on June 2, 2010. The University is also continuing to implement the EGLE approved post-construction storm water management requirements outlined in the Storm Water Management – Post-Construction Requirements Guideline (EP3-001) located on the Environment, Health & Safety Department in Ann Arbor (EHS-AA) web site. On May 28, 2013, U-M submitted a Phase II permit renewal application to EGLE in accordance with the notification from EGLE dated February 5, 2013, and provided additional requested updates on May 28, 2015. On January 12, 2021, EGLE provided comments to this information and requested additional updates which were provided to EGLE on April 12, 2021. For the purposes of this report, please note that EHS-AA is associated with UMAA, the Environmental Health and Safety Department in Dearborn (EHS-D) is associated with UMD, and the Environment, Health, and Safety Department in Flint (EHS-F) is associated with UMF.

b) Provide a report of illicit discharges and illicit connections removed.

There were zero cross connections and four (4) illicit discharges to the MS4 identified during this reporting period.

Illicit Discharges:

- U-M Ann Arbor – Duderstadt Center - On November 16, 2023, turbid water from a water main break at the loading dock of Duderstadt Center on U-M's North Campus entered a nearby catch basin. An inlet filter bag was installed when EHS staff arrived. The outfall at the Fuller Rd bridge was viewed and turbid water was observed discharging. EGLE was notified via a phone call within 24hrs of the discharge, and a follow-up written report was later provided detailing the incident. Water main repairs were completed that same day.

- U-M Ann Arbor – Michigan Memorial Phoenix Lab – On the afternoon of December 4, 2023, turbid water from a water service lead break entered nearby catch basins at the loading dock for the Michigan Memorial Phoenix Lab on U-M's North Campus. Staff arrived onsite and inlet filter bags were installed and pressure to the service lead was reduced. On Tuesday, December 5, 2023, EHS staff observed turbid water discharging from the outfall at the Fuller Road bridge. EGLE was notified via voice message and a follow-up written report was later provided detailing the incident. Repairs were completed on Tuesday, December 5, 2023.

- U-M Ann Arbor – U-M Medical Campus Dock 2 – On March 26, 2024 a U-M garbage truck hydraulic line failed at the loading dock at the Medical Sciences building on U-M's Medical Campus. U-M Waste Management staff immediately applied Oil-Dri to the spill. It was raining during the cleanup, with a 0.15" rainfall event occurring that morning. EHS staff arrived at the site to check nearby storm drains for any sheens or evidence of the oil. Because of the rainfall, storm water flow was evident in the storm sewer system but no sheens, odors, or other evidence of a release were observed in the storm sewer system flows. An estimated 3 gallons of hydraulic oil was spilled. EHS staff checked the City of Ann Arbor outfall to the Huron River just northwest of the Fuller St and

Fuller Rd intersection, where a sheen was noted to be discharging. Staff noted that the sheen was evident immediately at the outfall and interface with the river, but quickly dissipated downstream. Upon becoming aware of the sheen at the outfall, U-M staff notified EGLE via voice message. Please note, due to the rainfall event that occurred that morning, we could not be certain that the sheen noted at the outfall was related to the hydraulic spill or was just a typical sheen from road runoff, but given that we did have a spill event, we determined it prudent to notify EGLE. Staff strategically placed and anchored absorbent pads amongst the rocks at the outfall to mitigate the sheen. The pads were collected later that day for proper disposal. A follow-up written report was later provided to EGLE detailing the incident.

- U-M Ann Arbor – School of Pharmacy (under construction) – On June 24, 2024 EHS staff were notified of a water main break at the construction site of the new School of Pharmacy project. EHS staff arrived on site and noted filter bags in nearby inlets. However, due to the quantity of water flowing, a City of Ann Arbor outfall just north of Glen Court was checked and a plume of turbidity was observed. EGLE was then notified via voice message of the incident. The water was able to be shut off later in the day and EHS staff no longer observed any turbidity at the outfall. Repairs were able to be made by that evening. All adjacent streets were swept, and City staff utilized three vac-trucks to clean adjacent storm sewer structures. The failed section of pipe was determined to be deteriorated and has since been replaced. A written follow-up report was submitted to EGLE detailing the incident.

- U-M Ann Arbor - North Campus Facility Services (previously reported) – On June 25, 2018, the HRWC discovered a trickle (estimated at <3 gallons per hour) of water with elevated conductivity emanating from one of our outfalls (O-83) located on North Campus and discharging to Millers Creek. U-M began an investigation, including dye testing at adjacent buildings and televising the storm system and underdrains connected to this outfall. No illicit connections were found. We continue to monitor and investigate the possible source.
  *Please note, there are other locations within the eastern branch of Millers Creek that are also experiencing high concentrations of chloride and conductivity. Please see Page 12 of the April 2021 Michigan AIPG publication "Geologically Speaking" for additional information.
  http://mi.aipg.org/newsletters/pdf/2021%20Q2%20MI%20Newsletter.pdf

Cross-Connections:

Dye testing was completed during the reporting period to verify proper sewer connections by UMAA at the following locations:

- John Street at S. Fifth Ave on October 2, 2023
- Adventure Education Center on Dixboro Rd on March 18 – 22, 2024
- William W. Cook Legal Research Library located on Monroe St. on June 10-14, 2024

No cross-connections were identified.

c) Assess Best Management Practice Appropriateness and Progress toward Goals Identified in the SWMPP.

This section presents the progress made this reporting period toward meeting the measurable goals which were written in the SWMPP to support the program elements (e.g. Total Maximum Daily Loads, Public Education Program, Public Involvement and Participation, etc.). Each subsection below is prefaced with excerpted language from the SWMPP (*italicized*) followed by a table of measurable goals and the U-M activities, which help to meet the measurable goals. The table also indicates in which fiscal year actions were initiated to support a particular measurable goal and whether U-M is in compliance with that goal. Compliance presents in the form of a discrete set of activities that have previously been completed and reported or an on-going effort with activities that are updated in each report. Additional activities supporting a program element are also noted at the end of each subsection.

i. Total Maximum Daily Loads (TMDL)

The U-M participates in TMDL reduction efforts throughout the permit cycle for Total Phosphorus – Ford & Belleville Lakes; E.coli – Geddes Pond; Biota – Mallets Creek; E.coli – Rouge River; and Biota – Rouge River; E.coli – Flint River.

Table 1 presents the status of each TMDL activity, associated measurable goals as written in the SWMPP, and current or past activities supporting the measurable goals.

Table 1 Total Maximum Daily Load Activities

TMDL Activities Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
Review existing outfalls to identify major discharge points (≥ 36-inch conveyance) discharging directly to surface waters of the state within the portion of the TMDL.	FY 2011-2012 (Annual)	✓	✓	
By April 15, 2012, U-M will take samples of at least 50% of the major discharge points within the portion of the TMDL watershed in the urbanized area. At a minimum, these samples will be analyzed for the applicable TMDL parameter (E. coli or total phosphorus). The sampling results will be retained and reported in the second progress report.	FY 2011-2012 (Annual)	✓	✓	
By October 1, 2013, sampling results and other available information will be reviewed. A plan will be developed to reduce the discharge of the applicable TMDL parameter (E. coli or total phosphorus). These prioritized actions will be reported with implementation targeted during the 5-year permit cycle that begins 2013. *Note that as of the date of this report, U-M is still operating under the 2010 SWMPP.*	FY 2012-2013 (Annual)	✓	✓	

TMDL Activities

U-M All Campuses

- U-M is aware of updated statewide TMDLs and will continue to work with local watershed groups to meet these goals as necessary.

U-M Ann Arbor – Previously Reported

- As previously reported, outfalls have been evaluated to determine if they are "major" discharge points (greater than 36 inches in diameter). A list of major outfalls is kept on file. UMAA has identified four major discharge points within TMDL reaches. O-47R (NC_OF-005) and O-41 discharge directly into Millers Creek. O-30R (NC_OF-001) and O-88R (NC_OF-003) discharge directly to the Huron River. Outfall O-41, previously reported, is no longer assessed by U-M as it was determined to be a City-owned outfall discharging to Millers Creek. Outfall O-41 is located south of Baxter Road and northwest of the Waste Management Facility and discharges to Millers Creek.

- As previously reported, UMAA conducted sampling and analysis of O-41 and O-47R on March 30, 2012, for E. coli and total phosphorus. This represents 50% of the major discharges.

- As previously reported, based on the sampling results and an overall review of the SWMPP, the U-M has developed a plan to reduce the discharges of the applicable TMDL parameters. In an effort to maximize resources and minimize duplicate efforts, U-M is addressing TMDLs in a consistent manner as the HRWC and other area MS4s. HRWC has written a TMDL Implementation Plan for the Huron River Watershed MS4s in Washtenaw County. Aspects of that Implementation Plan are incorporated in the updated SWMPP as part of the NPDES Application for discharge of storm water to surface waters from an MS4. Management activities addressing the specific TMDLs have been identified and prioritized in Appendix I of the SWMPP.

U-M Dearborn – Previously Reported

- UMD identified three major discharge points, two of which discharge directly into the Rouge River and one that discharges into the City of Dearborn's storm line on Hubbard Drive.

- UMD conducted sampling and analysis on all identified major discharge points. Two discharge points were sampled on November 22, 2011, and the last discharge point was sampled on June 19, 2012.

U-M Flint – Previously Reported

- The Flint River is now included in the statewide *E.coli* TMDL. UMF will continue to work with local watershed groups to address these goals.

ii. Public Education Program (PEP) – Education and Outreach on Storm Water Impacts

Recognizing the need for public involvement in the effort to reduce storm water pollutants, the U-M has developed a broad and aggressive storm water education and outreach program. This multi-faceted program is closely connected to the U-M's pollution prevention (P2) program and its many initiatives. Specifically, the storm water education curriculum is designed to promote, publicize, and facilitate watershed education while encouraging the P2 practices developed under the U-M's environmental stewardship agenda. The intended audience for the program is all persons associated with the University who could potentially affect the quality of storm water discharges, including, but not limited to: campus residents; University faculty, staff, and students; visitors to the campus; contractors and vendors working on the campus; and commercial and industrial operations on campus. U-M's overall goal for the PEP is to bring awareness of storm water issues to 70% of the University community by the end of 2013. Levels of storm water awareness are anticipated to vary widely among the different community groups, with more emphasis given to key staff having greater potential to impact storm water quality during their day-to-day work activities. The remainder of the University community is targeted through other means, such as brochures, posters, websites, storm drain markers, PSAs, etc.

The following is a description of each of the public education topics identified in the permit, to be included as appropriate, based on the potential impact on the receiving waters:

- *Educate the public of hazards associated with illicit discharges and improper disposal of waste. Part of this education is to encourage public reporting of the presence of illicit discharges or improper disposal of materials into the U-M drainage system.*
- *Educate the public concerning the water body that would be potentially impacted by improper actions at or near a person's home.*
- *Educate the public on the availability, location and requirements for household hazardous waste disposal, travel trailer sanitary wastes, chemicals, grass clippings, leaf litter, animal wastes and motor vehicle fluids.*
- *Educate the public regarding acceptable application and disposal of pesticides, herbicides, and fertilizers, including the use of phosphorus-free fertilizer alternatives, as appropriate.*
- *Educate the public on preferred car cleaning agents and procedures for noncommercial car washing.*
- *Educate property owners with a septic system on proper maintenance and how to recognize system failure.*
- *Educate riparian landowners of management of lands to protect water quality.*
- *Educate the public about their responsibilities and stewardship of their watershed.*
- *Educate the public on the benefits of using native vegetation instead of non-native vegetation.*
- *Educate commercial and institutional entities likely to have significant storm water impacts. (At a minimum, commercial food services shall be educated to prevent grease and litter discharges to the MS4).*

Table 2 presents the status of each public education program activity, associated measurable goals as written in the SWMPP, and current activities supporting the measurable goals. Table 3 includes activities that go beyond the expectations of the original measurable goals.

Table 2 Public Education Program Activities

PEP-1 Storm Water Education Brochures

In cooperation with the U-M School for Environment and Sustainability, EHS-AA developed a series of brochures to assist various members of the University community in preventing storm water pollution on campus. The brochures have been designed to meet the overall program objectives for specific audiences.

Over the years, the storm water public education program has evolved and grown. The program has largely converted the educational content from paper brochure format to digital posters in an effort to reduce paper waste and align with the University's sustainability goals. The digital posters use the messages and content from the original brochures. The target audience remains students, faculty, staff, and visitors.

PEP Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
A minimum of 1,800 brochures will be distributed annually during presentations, training courses and new employee orientation sessions. The quantity of brochures distributed throughout the year will be tracked.	FY 2009-2010 (annual)	✓	✓	✓
In 2010-2011, develop/add additional brochures to fill any gaps in the topics needed to meet the permit requirements. Keep a copy of newly developed/added brochures with dates finalized.	FY 2011-2012 (mid-year)	✓	✓	
In 2011-2012, create a dissemination strategy to reach the target audiences and any new audiences identified by U-M. Identify educational information available/developed for each target audience applicable at U-M and keep this information on file.	FY 2011-2012 (annual)	✓	✓	
In 2012-2013, implement the new dissemination strategy/plan for educational brochures. Tally the number of brochures distributed and provide in the annual reports.	FY 2012-2013 (annual)	✓	✓	

PEP-1 Activities

U-M Ann Arbor

- EHS-AA continues to post the storm water digital display; titled "Keep our Michigan Waters BLUE!" which explains what storm water runoff is and why it can pose a threat to surface waters. The digital display was exhibited on flat screen televisions located within the Shapiro Undergraduate Library and the Hatcher Graduate Library from September 10-24, 2023 and December 3-7, 2023.The digital display was also posted in the lobbies of 18 residence halls and associated dining halls for the entire 2023-2024 academic year. The digital display is scheduled to be posted again at the libraries, residence halls, and dining halls this coming academic year.

- A digital display titled "Never Dump Anything Down a Drain" was posted in the EHS-AA lobby on a digital kiosk between October 1, 2023 and December 31, 2023 and April 1, 2024 and June 30, 2024.

- UMAA was a listed community partner in the 2024 Huron River Watershed Community Calendar and supported its distribution. The 2024 Calendar is a collaborative effort to educate communities about the importance of water stewardship and nonpoint source pollution prevention. In all, the HRWC and its partners distributed 48,000 2024 Calendars to residents, staff, volunteers, constituents, and members of the watershed community. EHS-AA distributed 300 calendars to staff and campus visitors through meetings, trainings, and placement in publicly accessible locations. A 2025 calendar is planned for future distribution.

- In an effort to reach the U-M digital audience, U-M continued to share storm water-related social media posts in this reporting period. A summary of the postings can be found in Table 3. Figure 1, dated May 23, 2024, depicts a typical post on X (formerly known as Twitter).

Figure 1 University of Michigan X posting on May 23, 2024.

Table 3 Social Media Posts within Reporting Period

Date	Media Type	Message
8/6/2023	X - University of Michigan	Help maintain the pristine blue waters of #Michigan by refraining from dumping waste into storm drains! Remember, pollutants that enter storm drains eventually find their way into rivers. http://myumi.ch/6x75E #PlanetBlue
8/8/2023	Facebook – University of Michigan	Join us in preserving the pristine blue waters of Michigan by taking action and refraining from dumping waste into storm drains. By doing so, you can prevent pollutants from entering our rivers and lakes. Discover more about the initiative: myumi.ch/6x75E
8/30/2023	Instagram (story) – University of Michigan	Storm water video shared. Let's keep our Michigan waters blue! Avoid dumping waste into storm drains to ensure pollutants don't flow into rivers and lakes. Learn more: http://myumi.ch/Mrx1g
8/31/2023	Facebook story – University of Michigan	To prevent harm to Michigan's precious water resources and keep our waters clean and safe, don't dump waste into storm drains. Learn more about how to protect our environment: http://myumi.ch/6x75E
11/6/2023	X – University of Michigan	Storm drains lead straight to rivers, lakes, and streams. And when contaminants enter them, they pollute our water resources. Do your part and don't dump waste. Thanks for your help in keeping our Michigan waters blue! http://myumi.ch/6x75E
11/20/2023	X – University of Michigan	When contaminants enter storm drains, they pollute our waterways. Only rain in the drain. Learn more: http://myumi.ch/6x75E
1/25/2024	X – University of Michigan	Do your part to keep our #Michigan waters blue by not dumping waste into storm drains! Pollutants wash into drains and flow into rivers. http://myumi.ch/6x75E #PlanetBlue
3/3/2024	X – University of Michigan	Do your part to keep our #Michigan waters blue by not dumping waste into storm drains! Pollutants wash into drains and flow into rivers. http://myumi.ch/6x75E #PlanetBlue
3/11/2024	Linked In – University of Michigan	Storm drains lead straight to rivers, lakes, and streams. When contaminants enter storm drains, they pollute our water resources. Do your part and don't dump waste in our waterways. Help keep our Michigan Waters Blue! myumi.ch/6x75E
3/22/2024	X – University of Michigan	Keep our Michigan Waters Blue this World Wetlands Day! Never dump anything into a storm drain. When contaminants enter storm drains, they pollute our water resources. Do your part and don't dump waste. http://myumi.ch/8re5q

5/23/2024	X – University of Michigan	Leaders and Best know how to keep their Michigan waters blue. Never dump waste in a storm drain. Never dump anything into a storm drain! Do your part: http://myumi.ch/8re5q
6/25/2024	Linked In– University of Michigan	Storm drains lead directly to rivers, lakes and streams. When contaminants enter storm drains, they pollute our water resources. Do your part and refrain from dumping waste. Help keep our Michigan Waters Blue! myumi.ch/8re5q

- U-M's Graham Sustainability Institute is no longer actively distributing paper copies of the 2014-2015 Sustainability Guide. However, duplicative information is located on the Planet Blue website (planetblue.umich.edu). During this reporting period, the Planet Blue homepage received approximately 6,697 unique views.

- There were 281 views of the online visual story of storm water management on campus during this reporting period. There have been 1,603 total views since its posting in July 2018. The online visual story was a collaboration between UMAA's Office of Campus Sustainability (OCS), EHS-AA, and Architecture, Engineering and Construction (AEC). The visual story is located here: https://ocs.umich.edu/university-of-michigan-storm-water-management-highlights/

- On September 21, 2023, EHS-AA participated in U-M's annual Earthfest by hosting a booth on storm water management on the U-M campus. The function of pervious pavement was demonstrated at the booth along with an information display providing storm water education and copies of our Storm Water Management Summary Sheets describing best management practices installed on campus to manage storm water runoff. A loop of our EHS storm water educational video was also played at the table.
  -The event is organized around the four themes of U-M's Campus Sustainability Goals: Climate Action, Waste Prevention, Healthy Environments, and Community Awareness. U-M student organizations, U-M departments, and community groups focused on sustainability promote their work on campus and in the greater university community. Earthfest is designed to engage, entertain, and educate U-M students, faculty, and staff on all aspects of sustainability.

U-M Dearborn

- EHS-D continues to pass out six pamphlets related to storm water, a bookmark, and a storm water mouse pad at all new employee orientations and other various campus events. A total of three (3) orientations were held within the reporting period. This packet provides general storm water awareness to the campus with additional tips on how to handle household hazardous waste and pet waste as well as information on fertilizers, pesticides, paints, and vehicle maintenance. One of the pamphlets is passed out to contractors titled "Storm Water: A Shared Responsibility" which provides a brief overview of how storm water is discharged from campus and some best management practices for the various types of contractors (food services, custodial services, construction contractors, etc.) to use while working on campus. Storm water brochures and bookmarks continue to be available to our campus community.

U-M Flint

- EHS-F distributed storm water education bookmarks to the campus bookstore and library. Storm water informational mouse pads continue to be utilized in some select computer labs/stations and other spaces on campus and are replaced when requested or on an as-needed basis.

- EHS-F updated the display case (Figure 2) located at the Harrison Parking ramp near a high traffic/pedestrian walkway. Storm water information is displayed in this location with an overall theme of "Only Rain in the Drain."

Figure 2 Harrison Parking ramp display case

- EHS-F directs contractors to the U-M Contractor Guidelines webpage which provides information on how to avoid spills and prevent potential releases to storm drains. These resources, along with kick-off meetings, are used to educate contractors and project managers about storm water management and the protection of drains and surface water

- At UMF, the campus community is informed through trainings, posters, signage, websites, display boards, bookmarks, flyers, and e-mail communications to contact UMF Public Safety in the event of any emergency, including those involving a potential release of pollutants that may occur outdoors and could potentially migrate to a sewer or surface water. Additionally, individuals are instructed to always attempt to protect nearby drains if a material is spilled in the area, if it is safe to do so. EHS also manages an information table at campus events in at which storm water-related information is shared and discussed with attendees (Figure 3).

Figure 3 Example of information table at campus events.

PEP-2 EHS/SEAS Websites

Developed in cooperation with the U-M School for Environment and Sustainability (SEAS) and maintained by EHS-AA, the Storm Water Education Website builds upon the information contained in the brochures and disseminates information to the general University community and the public at large. This website is intended to help students, employees, and visitors in the U-M community understand how the University's storm water system operates, various legal requirements, and what individuals can do to reduce contamination in the storm water system from surface runoff. As viewers move through the site they learn about storm water, what they can do to help protect it, how regulations impact the University's operation, and various safe practices. The UMD and UMF websites also provide topical information for practices potentially impacting storm water.

Storm water website content is updated on a regular basis to include pertinent information related to storm water management and pollution prevention.

Current material on the websites can be viewed via the following links:
UMAA: http://ehs.umich.edu/environmental/water/stormwater/ and
http://ehs.umich.edu/construction-projects/environmental-considerations/storm-water-management/
UMD:https://umdearborn.edu/offices/environmental-health-and-safety/environmental-protection/storm-water
UMF: http://www.umflint.edu/ehs/stormwater-management/

An additional website has been developed through the UMAA Office of Campus Sustainability (OCS) and Planet Blue at http://planetblue.umich.edu/. Through Planet Blue, staff and students can become a Planet Blue Ambassador by completing modules. More information regarding the implementation of this program is outlined in the additional measures taken to achieve the PEP goals at the end of this section. Websites for the UMD and UMF Offices of Sustainability have also been developed and can be found here, respectively: https://umdearborn.edu/sustainability and https://www.umflint.edu/sustainability/

PEP Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
The number of visitors to the websites will be tracked annually for subsequent reporting. The goal is to have 2,000 website hits annually. This website is intended to help students, employees, and visitors in the U-M community understand how the University's storm water system operates, various legal requirements, and what individuals can do to reduce contamination in the storm water system from surface runoff. This website tally may also serve as an indication of the community seeking additional storm water information from the link provided in the brochures, as detailed above.	FY 2004-2005 (annual)	✓	✓	✓
Review and update existing websites and perform periodic review. Print a copy of website changes made, noting the date of revision, etc. A copy of these changes will be kept on file.	FY 2009-2010 (annual)	✓	✓	✓

In 2010-2011, create a website information dissemination and coordination strategy (all campuses) to reach the target audiences. Identify educational information available/developed for each target audience applicable at U-M. This information will be kept on file.	FY 2011-2012 (mid-year)	✓	✓	
In 2011-2012, develop/add additional topics, web links, etc. to fill any gaps in the topics needed to meet the permit requirements. Print a copy of website changes made, noting the date of revision, etc. A copy of these changes will be kept on file.	FY 2011-2012 (annual)	✓	✓	
In 2012-2013, implement the new dissemination strategy/plan for the storm water education website. The number of website hits will be tracked for reporting (above).	FY 2012-2013 (annual)	✓	✓	

PEP-2 Activities

U-M Ann Arbor

- A QR code is provided on printed materials and digital posters, which can be scanned by smart phones to direct viewers to the EHS-AA storm water website.

- The EHS-AA storm water web pages have received approximately 18,153 unique hits from their inception on September 30, 2016, to June 30, 2024. During this reporting period, there were approximately 4,028 unique hits to the storm water web pages.

- EHS-AA Storm Water Web Page unique hits this reporting period:
  http://ehs.umich.edu/environmental/water/stormwater/ (1,021 unique hits)
  http://ehs.umich.edu/construction-projects/environmental-considerations/storm-water-management/ (188 unique hits)
  http://ehs.umich.edu/environmental/water/stormwater/storm-water-control-measures/ (864 unique hits)
- http://ehs.umich.edu/environmental/water/stormwater/storm-water-video/ (1,800 unique hits)

- The 2022-2023 annual storm water NPDES report was added to the EHS-AA website on October 12, 2023. The 2024 mid-year report was added to the EHS-AA website on September 9, 2024. http://ehs.umich.edu/environmental/environmental-data-and-reports/

- An interactive Google map of storm water BMPs on campus was added to the EHS 'Storm Water Control Measures' webpage on August 1, 2023. It received 155 views during this reporting period.

- In addition to the EHS web pages there are several other UMAA departments that maintain websites that discuss relevant sustainability and best management practices including the Athletics Department, Grounds Services, and Architecture, Engineering and Construction.

U-M Dearborn

- During the reporting period, there were 2,943 unique page views of the EHS-D website. Fifty-eight (58) views were specifically of storm water-related pages.

- The storm water webpages provide the UMD campus community with information on how the storm water system operates, what the laws require, and what can be done to reduce contamination in our storm system and ultimately, the Rouge River. The website offers links to various external organizations such as Friends of the Rouge (FOTR), Alliance of Rouge Communities (ARC), EGLE, Southeast Michigan Council of Governments (SEMCOG), and Earth 911. The storm water webpage also provides links to two storm water awareness videos.
  https://umdearborn.edu/offices/environmental-health-and- safety/environmental-protection/storm-water

- EHS-D updated its website to include a "Storm Water Education and Participation Opportunities in the Community" section on the main page. Information is updated on a seasonal basis. Examples are shared below (Figures 4 and 5).

Rouge Frog & Toad Survey Training

Training is offered every spring for those who would like to commit to surveying wetlands twice a month, March through July, after dark, and record what species of frogs and toads are calling. Information and materials are provided at the annual training.

Figure 4 EHS-D webpage content example.

Figure 5 EHS-D webpage content example.

U-M Flint

- EHS-F maintains a storm water website which is available at the following link: http://www.umflint.edu/ehs/stormwater-management/

- The website provides a wide range of storm water educational information including UMF program documents, Flint River watershed information, and links to the Flint River Watershed Coalition (FRWC), Genesee County Parks, Flint River Restoration webpage, SEMCOG, and more.. These groups encourage protection of the Flint River, describe how to get involved in local initiatives, and more.

- During the July 1, 2023, through June 30, 2024, reporting period, there were approximately 4,111 unique page views of the EHS-F website. One hundred and fifty (150) views were specifically of storm water pages.

- EHS-F and Facilities & Operations maintain a website, located at http://www.umflint.edu/facilities/contractor-guidelines/ to help contractors and project managers quickly locate environmental health and safety information. EHS-F also maintains a separate departmental link with reference materials and environmental programs for contractors, located at: http://www.umflint.edu/ehs/project-review/

- Website topics include: storm water management, SESC, and environmental due care requirements. All of the topics are critical in ensuring contractors clearly understand and comply with the University's storm water management program and University expectations when working on University property. The web links for the U-M construction safety requirements, storm water management requirements, and SESC requirements are all incorporated into contractor bid specifications and contract documents. Additionally, a fact sheet specifically for contractors working on UMF campus is available.

- The UMF Office of Sustainability has a website that includes a Sustainability Map that showcases the location of BMPs on campus, such as a green roof and rain garden. It also provides links to events and resources for the campus community. https://www.umflint.edu/sustainability/

PEP-3 Video & Public Service Announcements

The video 'Storm Water Management at the University of Michigan' provides viewers with an overview of storm water issues as they pertain to University operations and activities. The video begins with an overview of the UMAA's storm water drainage system and its receiving bodies followed by a synopsis of the legal requirements that mandate the NPDES permit and the development of a storm water management program. The remainder of the video focuses on how storm water can become polluted because of human activities. It proceeds to inform viewers of the University's actions to protect storm water quality in the following areas: salt use and deicing activities, waste management and spill response, campus planning and expansion, cleaning outdoor equipment and vehicles, chemical disposal practices, and food vendor training.

PEP Activity Measurable Goals	Initial Action Reported in:	Current Status		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
The number of offerings of storm water videos will be tracked annually for subsequent reporting in the progress reports. A listing of available storm water videos will be kept on file.	FY 2009-2010 (annual)	✓	✓	✓
Storm water, waste disposal, and recycling related Public Service Announcements will be distributed annually for use during the Football season home games. These short educational messages will provide storm water information to visitors, students, staff and contractors attending the U-M football games. The total anticipated audience for these messages is over 109,000 per game.	FY 2009-2010 (annual)	✓	✓	✓

PEP-3 Activities

U-M Ann Arbor

- An online storm water educational video is available for viewing on the EHS-AA website. The video is used on an as-needed basis for inclusion in faculty and staff presentations, classes, workshops, general storm water education tool, etc. All new employees are sent a welcome email directing them to the online U-M storm water educational video as well. The video had 1,800 unique views during this reporting period and is located here: http://ehs.umich.edu/environmental/water/stormwater/storm-water-video
  [ALSO PART OF PEP-4 BELOW]

- A digital message was posted on the 27-ft x 48-ft football stadium marquee located outside the stadium during seven home football games from September 2023 through November 2023 and a spring game in April 2024 (up to 20 times per game) (Figure 7). A message was also posted on the stadium digital boards approximately one hour before the game with one accompanying public service announcement (PSA) as noted below (Figure 6). This PSA was also played at football entrance gates approximately 15 times per game. Attendance at each game is approximately 110,000 potentially reaching an audience of approximately 770,000 over the 2023 football season.

"Michigan fans, help keep our Michigan waters BLUE by properly disposing of trash and recyclables! Did you know that outdoor drains found in parking lots and along roadways are directly connected to rivers, ponds, and lakes? Nothing but storm water should ever be discharged into these storm drains. So do your part and help keep our Michigan waters BLUE!"

Figure 6 Stadium marquee message for football game days

- Since July 1, 2018, outside of football game times, a digital message has been showing on the large stadium marquee. The message is shown approximately six times per hour reaching pedestrians and vehicular traffic on Stadium Blvd. See Figure 7 for the image of the message and Figure 8 for an image of the display screen outside the stadium.

Figure 7 Updated stadium marquee message for off-game times

Figure 8 Stadium marquee located outside the football stadium

- Through the Planet Blue Ambassador program, students, faculty, and staff can complete the online training modules on different relevant topics (e.g., water). Individuals from every major school and unit on the Ann Arbor campuses (including most F&O units and the Health System) have participated. Approximately 9,900 students, faculty, staff, alumni, and community members have been certified as Planet Blue Ambassadors since the January 2013 inception of the program. One thousand four hundred seventy-one (1,471) people completed the Planet Blue Ambassador program during this reporting period. For the Water module portion of the Planet Blue Ambassador Training, students and staff are encouraged to make pledges including, but not limited to:
  - I will always properly dispose of extra household hazardous waste (HHW).
  - I will fix any oil or other automotive fluid leaks on my vehicle immediately.
  - I will wash my vehicle on a permeable surface or at a carwash that reuses water.
  - I will properly dispose of my extra medications and not flush them. [ALSO PART OF PEP-4 BELOW]

  The videos may be viewed on YouTube at the following link:
  https://www.youtube.com/playlist?list=PLkpBjHvzRryplN_ahL0_TQ7f4E12tFixN

U-M Dearborn

- EHS-D created an online storm water training course which is offered on the storm water webpage. The training consists of a video and an eight-question quiz. Contractors working on U-M projects are the primary enrollees of the course. One hundred eleven (111) individuals completed the online storm water training during the reporting period.
  https://umdearborn.edu/offices/environmental-health-and-safety/environmental-protection/storm-water [ALSO PART OF PEP-4 BELOW]

- The exhibit area at the U-M Dearborn's Environmental Interpretive Center (EIC) is open to the public six days a week from 10 am until 5 pm. The exhibit area contains several interactive exhibits that allow the visitors to learn about various aspects of the Rouge River Watershed, water quality concerns and conservation efforts and practices. These exhibits are also used in our formal education programs and university courses. The exhibits begin with an overview of the concept of a watershed and aerial photo of the Rouge River so visitors can get a perspective of the entire area of southeastern Michigan. The multi-media videos offer three, six-minute videos about the watershed, hydrologic cycle, and the problems facing the Rouge River. The exhibit area also houses several kiosks that encourage visitors to find ways to be a part of the solution with steps you can take at home to improve water quality.

- Two hundred thirty-four (234) individuals completed the Planet Blue Ambassador program during this reporting period. There are now 304 total ambassadors on the Dearborn campus.

U-M Flint

UMF implements campus wide recycling in all buildings and encourages proper management of waste whether one is on campus or at home. UMF also provides campus email communications promoting community household hazardous waste and consumer electronic waste collection days in the fall and spring of each year. These are sent to faculty, staff and students on an event group email (> 6,000 individuals).

- EHS-F partnered with the Office of Sustainability and Housing to collect e-waste and batteries during the student move out period in April 2024. Battery collection containers were placed in campus buildings as well as large e-waste collection pallet containers for appliances. Additionally, working appliances were collected and repurposed to other students in need.

- Eighty-six (86) people completed the Planet Blue Ambassador program during this reporting period. There are now 117 total ambassadors on the Flint campus.

PEP-4 Presentations (training sessions, workshops, etc.)

Storm water education presentations are provided to key staff having greater potential to impact storm water quality during their day-to-day work. The remainder of the University community is targeted through other means. The presentations discuss the storm water drainage system; the need for protecting the quality of storm water discharges; the NPDES permit, its legal requirements, and the storm water management program; and the most common storm water pollutants and ways to limit their effects on storm water. The presentations can also feature the storm water video.

Storm water education is provided during new employee orientation sessions (all employees at the U-M), new laboratory employee training classes and at new Facilities & Operations employee training classes. In addition, presentations including storm water topics are provided on an annual basis to UMAA Facilities & Operations staff, which includes the following sub-groups:

- *Architecture, Engineering and Construction,*
- *Custodial & Grounds Services,*
- *Environment, Health, & Safety,*
- *Logistics, Transportation & Parking,*
- *Maintenance Auxiliaries & Central Shops,*
- *Maintenance Regions,*
- *Office of Campus Sustainability,*
- *Operational Support,*
- *Real Estate Office, and*
- *Utilities*

PEP Activity Measurable Goals	Initial Action Reported in:	Current Status		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
Storm water topics will be included in a minimum of 50 classes, workshops or presentations annually. The number of sessions including training on storm water issues will be tracked for subsequent reporting.	FY 2009-2010 (annual)	✓	✓	✓
A minimum of 500 laboratories will be inspected annually. The inspections will include a review of issues impacting storm water quality, chemical storage, waste management and disposal. These inspections may also serve as an indicator of the effectiveness of storm water education received, or the need for additional education. The number of inspections performed annually will be tracked for subsequent reporting.	FY 2009-2010 (annual)	✓	✓	✓
All outdoor food vendors will receive training/education including related storm water issues annually. Food establishment inspections will include items to ensure storm water BMPs are being followed. These inspections may also serve as an indicator of the effectiveness of storm water education received, or the need for additional education. The number of inspections performed will be tracked for subsequent reporting.	FY 2009-2010 (annual)	✓	✓	✓

PEP-4 Activities

U-M Ann Arbor

- Contractors are provided information on construction site storm water-related topics at kick-off meetings and then throughout the construction phase by the Part 91 SESC inspectors. The information provided covers storm water regulations and SESC procedures and practices.

- Over this reporting period, 61 U-M staff members completed the online Storm Water Pollution Prevention Plan (SWPPP) training module. EHS-AA continues to use the online training module for refresher training of U-M staff members associated with SWPPP facilities.

- Twelve (12) individuals completed the "Environmental Considerations for U-M Project Managers" online course this reporting period. This course educates project managers on typical environmental considerations for construction projects including chemical and oil storage, contamination, dye testing, storm water, and soil erosion.

- EHS-AA held several online 8-hour Emergency Response Technician Refresher training sessions in December 2023, to train applicable facility staff and on-call Environment, Health, & Safety staff on emergency response activities. The training includes outdoor spill response and appropriate protocol to protect waterways. Eighty-five (85) staff attended the training sessions.

- Storm water topics were included in classes, workshops or presentations that reached over 1000 people during the reporting period. Examples of classes include: Storm Water Pollution Prevention

Plan (SWPPP) training, Spill Prevention Control and Countermeasure (SPCC) training, Laboratory Waste Disposal Training, Housing New Employee Orientation, Grounds Annual Safety Training, and Annual HAZWOPER Refresher training. Participants include staff from EHS-AA, Facilities & Operations staff, Athletics Dept., researchers, and other groups.

- A total of 4,301 laboratory rooms (1,704,942 ft^2 of lab space) and 216 shop rooms (194,998 ft^2 of shop space) were inspected during the reporting period at UMAA.

- One hundred and fourteen (114) inspections were performed by EHS-AA sanitarians on temporary food establishments during the reporting period. The inspections include checking that the appropriate food safety poster is displayed at each location. The posters indicate proper grease disposal and wastewater management tips.

- EHS-AA continues to work with U-M football stadium vendors/concession stands to prevent potential discharges into the storm water system. Concession stands were posted with signage detailing procedures for proper grease and wastewater management for the 2023 football season to reinforce proper waste management for these temporary operations. Posters will again be provided to vendors ahead of the 2024 football season.

U-M Dearborn

- UMD offered online storm water training for 111 contractors. Additionally, 1,105 students, staff, and faculty participated in our online laboratory safety training, which includes storm water-specific training.

- UMD conducted a total of 237 lab inspections during this reporting period.

- UMD provides informal in-person training for food service vendors even though they typically do not perform outdoor cooking activities. No outdoor cooking activities occurred during this reporting period.

U-M Flint

- During the reporting period, EHS-F provided online training to individuals in two (2) storm water related courses. Fifty-six (56) individuals completed the "Storm Water Pollution Prevention" course and 151 individuals completed the "Spill Prevention, Contingency and Countermeasures" Course or "Small Spill Response" course, or both. One hundred and thirty (130) employees have taken the online Hazard Communications training which touches on safe handling of chemicals, avoiding spills, and cleanup practices. Some classroom training sessions covered storm water protection practices as well. Storm water protection is also covered in HAZWOPER training courses, for which seven (7) employees attended.

- During the Office of Sustainability networking lunch on April 18, 2024, EHS-F staff discussed general storm water awareness topics and BMPs with attendees.

- Thirty (30) Housing Residential Advisors completed health and safety training that included storm water information in August 2023. An additional 46 employees attending HazCom/Bloodborne Pathogen training in August 2023 also received storm water awareness training. Roughly ten (10) Custodial staff received in-person training in September 2023 and six (6) Grounds staff received in-person training in December 2023.

- In addition to the routine area inspections related to the SWPPP and SPCC programs, EHS-F conducted 40 lab and studio inspections and 91 hazardous waste area inspections. These numbers do not include lab self-audits conducted by the individual departments (Biology, Engineering, Physics, and Chemistry/Biochemistry, etc.) who each complete their own regular inspections.

- EHS-F routinely inspects loading dock areas that are used by food service vendors and their suppliers to ensure waste materials, such as grease, are being properly stored and managed.

Table 4 Additional Public Education Program Activities

Activities
All Campuses • U-M campuses continue to maintain recycling programs. The programs divert waste from entering landfills; reduce carbon dioxide emissions; and saves water, energy, and trees. Proper disposal of potentially hazardous materials prevents contamination to the environment including surface waters. **U-M Ann Arbor** • A lunch and learn presentation about U-M's storm water program was provided to EHS staff on May 22, 2024. The presentation included information about U-M's storm water permit requirements, storm water control measures on campus, and how staff can help protect storm water quality. Sixteen (16) individuals attended the presentation and helped install 47 storm drain markers afterwards (Figures 9 and 10).

Figure 9 EHS staff members placing a storm drain marker.

Activities

Figure 10 An image of the University of Michigan storm drain marker.

- The U-M Graham Sustainability Institute Water Center periodically publishes newsletters. The U-M Water Center supports and engages in research focusing on water quality, water quantity, coastal infrastructure, water policy, and more. Collaborative research teams provide users in the region, such as community leaders, legislators, resource managers, and environmental non-government organizations (NGO), with usable information and practical tools to support and enhance the protection, restoration, and management of Great Lakes and its watershed.

- As part of the UMAA SPCC, initial and annual refresher training are provided to applicable staff. Appropriate staff are trained in the laws and regulations regarding spills, releases, and pollution control; the contents of SPCC; and the operation and maintenance of equipment to prevent discharges. Between July 1, 2023 and June 30, 2024, 18 staff were trained. This decrease is due to staffing changes and the implementation of a new, online training method during the reporting period. More typical participation numbers are anticipated once again in the next reporting period.

Activities

- UMAA continues to work with the U-M Outdoor Events Coordinator to provide environmental guidelines for events that may impact storm water. As part of this effort, EHS-AA recommends storm water BMPs and provides requirements to event staff to ensure waters of the State are properly protected from potential impacts.

- Helping to keep waste out of our waterways and encourage waste-reducing behavior, U-M participated in the national Campus Race to Zero Waste (formerly known as RecycleMania) competition in Winter 2024. During the eight weeks of the national competition, we collected more than 694,600 pounds of recyclables and 441,351 pounds of compost UMAA won first place in the Zero Waste category for large campuses.

- With the support of EHS staff and funding, U-M College of Pharmacy hosts biannual Safe Medication Disposal Events. These events help keep medications from reaching receiving waters. During this reporting period College of Pharmacy students staffed area pharmacies during orientation week to help collect area residents' unused or expired medications. Since these events began in 2014, more than 7,500 lbs. of waste has been collected.

U-M Dearborn

- The Dearborn campus started their single stream recycling program campus wide on July 1, 2012. In summer 2023 the Sustainability Programs Coordinator led an audit and redesign of the campus recycling system, which among other things, yielded new, easier-to-understand signage indicating what can go in the recycling bin and what should go in the trash.

- UM-Dearborn earned first place in one of the Green Events categories in the national Campus Race to Zero Waste competition. The "Words, Water, and Justice: Exploring the Flint Water Crisis Through Story-telling" event, a collaboration with UM-Flint, achieved a 100% waste-diversion rate.

- UMD hired a Sustainability Coordinator and launched the UMD Sustainability website. The intent of the website is to provide resources to the campus community and to eventually track energy consumption, recycling, composting, and similar sustainability metrics in a transparent manner. The website is located at https://umdearborn.edu/sustainability.

- EHS-D partners with several internal groups around campus to pass out storm water materials. This includes Mailing/Parking and the University Center who pass out Car Care brochures with parking passes to all faculty, staff, and students as well as the campus library and bookstore who pass out bookmarks throughout the year.

- The EIC hosts monthly Stewardship Saturdays. Volunteers are called upon to participate in the removal of invasive species and garbage from the EIC grounds near the Rouge River.

- The Friends of the Rouge (FOTR) hosts monthly Public Involvement Task Force Meetings, Rouge Education Project Task Force Meetings and board meetings. FOTR facilitates several volunteer monitoring programs including benthic macroinvertebrate monitoring, frog and toad surveying, and fish monitoring. Additionally, FOTR provides various workshops and educational presentations as well as play active roles in restoration projects within southeastern Michigan. Reports and additional information on their services can be found on their website at http://therouge.org/.

- UMD maintains three pet waste stations along the Rouge River Gateway Greenway Trail (Figure 11).

Activities

Figure 11 Pet waste station.

- All UMD Comprehensive Laboratory safety training classes include information on our storm water program.
- Facilities Operations field staff receive initial and annual storm water training via the SafetySkills web-based Learning Management System (LMS). Fifty-three (53) staff completed the training during this reporting period.
- In partnership with the Alliance of Rouge Communities (ARC), a static display banner titled “How Watersheds Work” was placed in the Renick University Center (unofficial center of campus) during Earth Week in April 2024 (Figure 12).

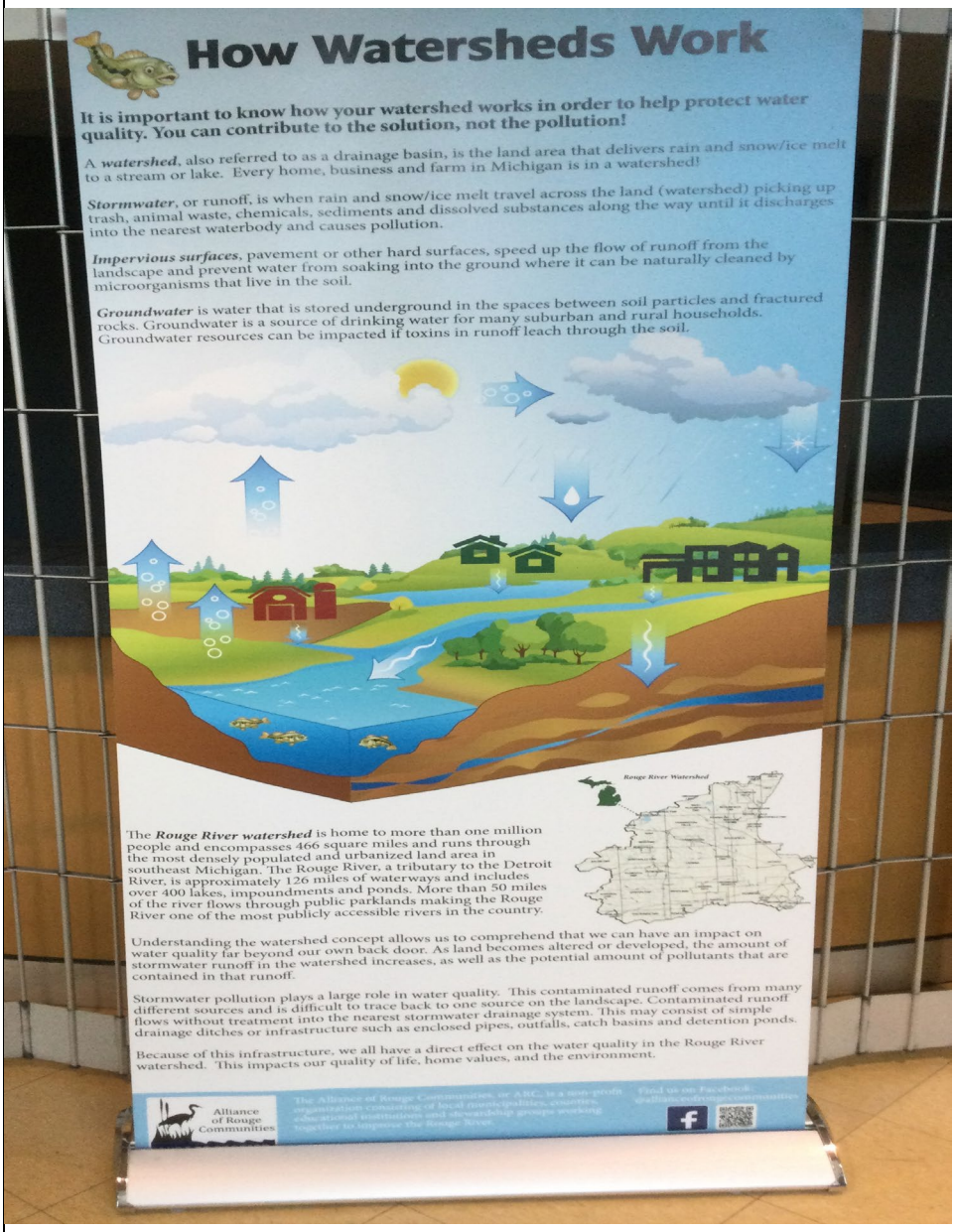

Figure 12 Banner in Renick Center for Earth Week 2024.

U-M Flint

- Hazard Communication, Hazardous Waste, HAZWOPER, and other general safety classroom training offered by EHS-F address the difference between sanitary and storm drains, illicit discharges, reporting spills, protection of drains, and who to call if an illicit discharge or spill is observed.

- UMF promotes the local Genesee County Household Hazardous Waste Collection dates as well as the dates for other surrounding communities, both via email and by posting on bulletin boards (Figure 13) in a high visibility area in the University Pavilion.

Figure 13 University Pavilion bulletin board.

- EHS-F meets with contractors prior to starting jobs to go over environmental and occupational safety requirements; this includes discussion of soil management, University's construction safety requirements, protection of storm drains, etc. EHS-F staff also conducts random inspections of work sites to ensure cautionary measures are in place prior to, and during, contractor work. If needed/required, SESC weekly inspections are conducted.

- The web links for the U-M construction safety requirements, storm water management requirements, and SESC requirements are all incorporated into contractor bid specifications and contract documents during the reporting year.

- SPCC/PIPP and SWPPP training is provided to select employees in Facilities & Operations. The training is offered annually and provides interactive online training modules for select employees. Training covers BMPs, housekeeping, protection of storm drains, reporting and responding to spills, and other topics relating to SWPPP and SPCC/PIPP compliance. More than 50 employees participated in online trainings during the reporting period. During this reporting period, additional in-person storm water training was provided to Grounds and Custodial staff.

- At UMF, the campus community is instructed through training, posters, signage, websites, display boards, bookmarks, flyers, and e-mail communications to contact UMF Public Safety in the event of any emergency, including those involving a potential release of pollutants to a sewer or surface water. Additionally, individuals are instructed to protect nearby drains if a material is spilled in the area and it is safe to do so.

- UMF is partnering with the City of Flint on sustainability goals to combat climate change. Faculty, staff, and students from UMF are working with city officials to co-create an environmental sustainability plan for the city. In fall 2021, a UMF Sustainability Committee was also created to coordinate the progress of helping the UMF campus towards its carbon neutrality goals. The committee continues to be active in building momentum and visibility. The following is a summary of various Sustainability Committee activities and initiatives during the reporting period:

  - Five (5) Planet Blue Ambassador trainings. There were a total of 70 certified Planet Blue Ambassadors from both our online and group training.

- Held two (2) Flint River Cleanups with a combined total of 37 volunteers, as well as collaboration with Mott, Americorp, and Flint River Watershed Coalition.
- Hosted a Sustainability Walking Tour where we showed the most sustainable features of campus, including the pavers outside of MSB and the Flint River Pedestrian bridge for one of the higher-level Wildlife Biology classes with an attendance of 18 people.
- Hosted the Sustainability Networking Lunch with topics on Recycling, Food, Energy, Stormwater, Greenspace, and Education with the Sustainability Committee with an attendance of 26 people.

iii. Public Involvement and Participation

The University encourages public input in all aspects of its storm water management program. In order to facilitate public participation, this plan and information related to the storm water management program are made available on the storm water web site. By viewing the Annual Reports that are placed on the web site, the general public and members of local stream and watershed protection organizations can make themselves aware of activities the University carries out under its storm water management program. In addition, when new storm water management program plans are developed and finalized, the City, County, and interested local stream and watershed protection organizations are allowed to review and comment on them. Website feedback link(s) will be provided to facilitate feedback on the Storm Water Management Program Plan (SWMPP) from the community.

One public awareness group that UMAA works with on a regular basis is the Huron River Watershed Council (HRWC). Many of the HRWC's goals are consistent with the University's ideals for the preservation and protection of the surrounding natural water bodies. As a result, the University has established an informal partnership with the HRWC and has provided input to the HRWC on issues concerning the Total Maximum Daily Load program for water bodies that lie within the Huron River Watershed.

Table 5 presents the status of each Public Involvement and Participation activity, associated measurable goals as written in the SWMPP, and current or past activities supporting the measurable goals.

Table 5 Public Involvement and Participation Activities

PIP Activity **Measurable Goals**	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
The SWMPP and NPDES reports will be made available on the U-M storm water web site, http://ehs.umich.edu/environmental/environmental-data-and-reports/ The date of addition to the website will be tracked for subsequent reporting.	FY 2009-2010 (annual)	✓	✓	✓
• The annual report for FY 2022-2023 was added to the EHS-AA storm water website on October 12, 2023, and the mid-year report for FY 2023-2024 was added to the EHS-AA storm water website on September 9, 2024.				
U-M will attend a minimum of 10 meetings annually with local watershed/creekshed organizations like the HRWC, Washtenaw County Drain Commission, City of Ann Arbor, the Millers Creek Action Team (MCAT), Flint River Corridor Alliance, FOTR, or other local stream protection organizations for collaboration on storm water issues in the community. U-M's participation in meetings, community events, etc. with these groups will be tracked for subsequent reporting.	FY 2009-2010 (annual)	✓	✓	✓

U-M All Campuses

- Forty-three (43) local watershed/creekshed meetings were attended during the reporting period across all three campuses. Details are noted below.

U-M Ann Arbor

- Over the reporting period, EHS-AA staff attended six (6) Middle Huron Initiative (MHI) Watershed Meetings, three (3) meetings with the Fleming Creek Advisory Committee, two (2) Coalition for Action on Remediation of Dioxane (CARD) meetings, two (2) City of Ann Arbor Capital Improvement Project stakeholder meetings, two (2) U-M Sustainable Grounds planning meetings, four (4) U-M Campus Plan 2050 meetings, and one (1) Honey Creek – Saginaw Forest meeting.

- UMAA was a listed community partner in the 2024 Huron River Watershed Community Calendar and supported its distribution. The 2024 Calendar is a collaborative effort to educate communities about the importance of water stewardship and nonpoint source pollution prevention. In all, the HRWC and its partners distributed 48,000 2024 calendars to residents, staff, volunteers, constituents, and members of the watershed community. EHS-AA distributed 300 calendars to staff and campus visitors through meetings, trainings, and placement in publicly accessible locations. A 2025 calendar is currently being developed.

U-M Dearborn

- EHS-D is an active member of the Alliance of Rouge Communities (ARC) and attended three (3) virtual and two (2) in-person committee meetings during the reporting period.

- UMD is a partner of Friends of the Rouge and currently has a faculty member serving on the Board of Directors.

- At the U-M Dearborn's Environmental Interpretive Center (EIC) we also support various off-campus community organizations that are involved in a variety of initiatives to improve the surrounding watershed and educate the public about the importance of being good stewards of our water resources and surrounding land. We host events, meetings and are involved in various activities involved in education and outreach with the following organizations that are directly related to water quality concerns:
  -Friends of the Rouge
  -Friends of the Detroit River
  -Southeast Michigan Land Conservancy
  -Stewardship Network: Lakeplain Cluster
  -Sustainable Business Forum

U-M Flint

- UMF is involved in local watershed planning and outreach-related activities both by attending meetings as well as playing a leadership role on various committees.

  - The UMF Director of University Outreach is a Board member of the Flint River Watershed Coalition and attended ten (10) regular meetings and two (2) special meetings during this reporting period.

  - The UMF Director of EHS participated in six (6) Flint River Restoration Project stakeholder meetings.

PIP Activity Measurable Goals	Initial Action Reported in:	Current Status		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
The City, County and interested local stream and watershed protection organizations will be notified of the online availability of the U-M SWMPP for review and comment on the same frequency the information is provided to the Department. The SWMPP will be accessible on the U-M website for review by the public. Any comments received will be reviewed by EHS-AA and evaluated for inclusion in the SWMPP. Comments submitted and any actions taken in response to comments will be documented and kept on file.	FY 2009-2010 (annual)	✓	✓	
The U-M will participate in meetings of the MHI (typically semi-annual) to address the Ford & Belleville Lake TMDL on phosphorus reduction throughout the permit cycle. Attendance at these meetings will be tracked for subsequent reporting.	FY 2009-2010 (annual)	✓	✓	✓
• U-M participated in six (6) MHI meetings during this reporting period. The MHI partnership continues to contract with the HRWC to perform monitoring of the Middle Huron tributaries.				
U-M will participate in Geddes Pond – E. coli TMDL efforts throughout the permit cycle. Management activities addressing E. coli include dry weather screening and illicit discharge elimination, semi-annual catch basin cleaning, pollution prevention, and public education. These efforts as well as attendance at meetings/events on this issue will be documented for subsequent reporting.	FY 2009-2010 (annual)	✓	✓	✓
• No meetings were held during this reporting period; however, U-M staff attends HRWC meetings and other creekshed meetings to help address regional TMDLs. The management activities are reported in other portions of this report.				
U-M will sponsor/offer a semi-annual volunteer opportunity for participants to get involved with storm water improvement and education programs. Examples of opportunities include storm drain stenciling/marking and invasive species removal projects. The number of volunteer events offered will be tracked annually for subsequent reporting. The number of participants in volunteer stewardship events will be tracked for subsequent reporting.	FY 2009-2010 (annual)	✓	✓	✓
U-M Ann Arbor • In association with a lunch and learn event to promote storm water awareness, 16 EHS staff volunteered their lunch hour to mark 47 storm drains across south and central campus on May 22, 2024. • On October 7, 2023, the McNeil lab once again organized a Huron River Cleanup. Seventy (70) graduate and undergraduate students in U-M's Department of Chemistry picked up thousands of pieces of trash from 20 parks along the Huron River in Ann Arbor and Ypsilanti. The event was				

held again in April 2024, with a similar number of participants. Another cleanup is scheduled for September 2024.
Video: https://www.youtube.com/watch?v=nWYTgpOI2SY

- Eco-Workdays organized by the Matthaei Botanical Gardens and Nichols Arboretum occurred throughout the reporting period. The events focus on invasive plant removal and strengthening campus ecosystems. Forty-six (46) workdays were hosted with roughly 400 participants volunteering in the 2023 calendar year.

- U-M continues its Michigan Turfgrass Environmental Stewardship Program (MTESP) campus-wide. MTESP certification is designed to encourage strategies to prevent pollution and recognize environmentally sound management practices. The program includes sections dedicated to promoting fish and wildlife habitat, indigenous vegetation and water quality protection.

- The U-M was the first campus to receive a Tree Campus USA recognition in 2008 from the Tree Campus USA program, sponsored by the Arbor Day Foundation and Toyota and has continued to be part of the program annually since 2008. Some of the efforts that earned the certification include having a tree advisory committee, maintaining a campus tree-care plan, dedicating annual funding for routine tree maintenance, and hosting volunteer days to remove invasive species from the North Campus woodlots.
https://www.arborday.org/programs/tree-campus-higher-education/campuses.cfm

U-M Dearborn

- The Friends of the Rouge (FOTR) hosts monthly Public Involvement Task Force Meetings, Rouge Education Project Task Force Meetings and board meetings. Reports and additional information on their services can be found on their website at http://therouge.org/.

- UMD celebrated Earth Month by hosting a Sustainability Fair on April 8, 2024. The event offered the opportunity to engage with local environmentally focused and community-engaged organizations from our campus and beyond. Those attending were able to network, find volunteer or job opportunities, and learn how to play a meaningful role in sustainability.

U-M Flint

- UMF Sustainability Committee hosted a sustainability event called ECO-Extravaganzalocated in the center of campus during the week of October 2, 2023. The week included speakers, events, and exhibitions. It is likely to occur again this coming fall 2024.
Website: https://www.umflint.edu/sustainability/

PIP Activity Measurable Goals	Initial Action Reported in:	Current Status		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
In 2010-2011, meet with local watershed/creek groups to identify joint activities and opportunities to meet permit requirements. Identify local creek/watershed groups, etc. timeframes, staffing and participation opportunities. This information will be kept on file.	FY 2011-2012 (mid-year)	✓	✓	
In 2011-2012, develop a participation plan for all campuses. Keep records of meetings attended, possible opportunities for coordination with local groups, etc. This information will be kept on file.	FY 2011-2012 (annual)	✓	✓	
In 2012-2013, implement the participation plan. Tally the number of meetings attended for annual reporting (as detailed in goals above).	FY 2012-2013 (annual)	✓	✓	

iv. Illicit Discharge Elimination Program (IDEP)

The removal of illicit discharges is an ongoing program being conducted by the U-M. As illicit discharges are identified, they are discontinued or otherwise corrected. The program described in this section will be used to determine the existence, location, and extent of possible illicit connections and discharges to the storm water drainage system. At a minimum, it will address the elements presented in Part I, Section B.3 of the Permit.

The UMAA has been involved in an ongoing program for identifying and controlling non-point source pollution to the Huron River. The Huron River Pollution Abatement Project was developed from a grant from the federal Clean Water Act and used by the UMAA to identify illicit connections to the storm water system. The project was completed in 1990.

The U-M will continue to encourage reporting of water quality problems and possible illicit connections and discharges to the storm water system. EHS-AA, Utilities, Maintenance – Auxiliaries & Central Shops, and/or Maintenance Regions will receive reports of water quality problems and possible illicit connections and perform follow-up investigations, leading to elimination where appropriate.

Table 6 presents the status of each Illicit Discharge Elimination Program activity, associated measurable goals as written in the SWMPP, and current or past activities supporting the measurable goals. Table 7 includes activities that go beyond the expectations of the original measurable goals.

Table 6 Illicit Discharge Elimination Program Activities

IDEP-1 Storm Sewer Map *A storm sewer system map is required in Part I.A.7.b.1 of the Permit. The map must include the location of all discharge points the permittee owns or operates, and the names and location of all surface waters of the state which receive discharges from the MS4.*				
IDEP Activity **Measurable Goals**	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
By February 1, 2011, the U-M will create a storm sewer system map identifying the location of all if its discharge points and the names and locations of all the surface waters that the MS4 discharges into.	FY 2010-2011 (Mid-year)	✓	✓	
The storm sewer system map will be updated periodically as discharge points are identified or added. The dates of modification of the system map will be tracked and kept on file.	FY 2010-2011 (Mid-year)	✓	✓	✓

- UMAA continues to work with F&O Geographic Information System staff to review and update the storm sewer maps as changes/updates are needed.

- UMD updates campus storm water maps as needed. Updated information is sent to a vendor to provide up-to-date master copies.

- At UMF, updates to current storm sewer maps are made as needed.

IDEP-2 Survey of Facility Discharge Points into the System

EHS-AA has implemented a program to identify discharge points from facilities into either the sanitary sewer or storm water systems. The first phase of this program began several years ago and resulted in the identification of facility discharge points on the Ann Arbor Campus. Information collected included water usage rates, category of activity, and categorization of water flows as domestic or non-domestic based on the activity occurring at the facility.

The second phase of the identification of facility discharge points will be implemented as part of this SWMPP. The second phase will consist of a continual observation process performed by EHS-AA, EHS-D, EHS-F, and Department of Public Safety & Security (DPSS) personnel as they perform other activities across campus facilities. The activities associated with this program are conducted as illicit discharges are identified. They are prioritized and discontinued or otherwise corrected.

IDEP Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
U-M will create a prioritized listing for the performance of dry-weather screening considering the criteria in Part I.A.7.b.2 of the permit. The list will be developed in 2011 to ensure the use of the most up to date storm sewer system map/information will be utilized. The list will be kept on file.	FY 2011-2012 (Mid-year)	✓	✓	

IDEP-3 Dry Weather Screening

In accordance with Part I, Section A.7.b of the permit, the purpose of dry weather field screening is to determine the existence, location, and extent of possible illicit discharges into the U-M storm water drainage system. The screening program has been designed to target discharge points within the storm water system that will help identify non-storm water flow. The current procedure used for dry weather screening is attached as Appendix E [of the SWMP]. This procedure will be updated periodically, and the most current copy of the procedure will be available for review in the EHS-AA, EHS-D, EHS-F, and DPSS offices.

For the purposes of dry weather screening, the U-M will be divided into five regions. The UMD and UMF will comprise one region for screening purposes. The remaining four regions will be comprised of UMAA areas determined from the outfall prioritization task in section 5.2 above. The regions are as follows:

- *UMD & UMF*
- *UMAA I*
- *UMAA II*
- *UMAA III*
- *UMAA IV*

IDEP Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
U-M will perform dry weather screening on each MS4 discharge point at least once every 5 years beginning on February 1, 2010, (per Part I.A.7.b.3) to determine the existence, location, and extent of possible illicit discharges into the U-M storm water drainage system on all three campuses. This is typically done during four to five rounds of screening. Any issues identified for further investigation or correction will be tracked for subsequent reporting. The number of illicit discharges and connections identified and subsequently corrected or removed will be tracked for subsequent reporting.	FY 2009-2010 (annual)	✓	✓	✓

U-M Ann Arbor

- In conformance with the revised, EGLE approved (November 4, 2013), dry weather screening program guideline, UMAA completed dry weather screening of all outfalls with a direct discharge to surface waters of the State in the summer and fall of 2019. Based on the most up-to-date UMAA GIS data, it was determined that there are 76 discharge points that meet the screening requirement criteria. Of these 76 outfalls screened, it was determined that five outfalls had flow that warranted follow-up sampling. The outfalls are located on the Medical Campus (O-24, O-26) and North Campus (O-86, O-30R, O-126). Initial visual and olfactory screening did not indicate any potential concerns from these five outfalls. Evaluation of the sampling analytical data indicates that these flows are not a significant contributor of pollution and do not pose a threat to human health or the environment; however, follow-up investigation activities will be conducted in conjunction with other construction and utility replacement projects. A new round of dry weather screening is planned for the summer and fall of 2024 and results will be shared in a subsequent report.

U-M Dearborn

- UMD performed dry weather screening at the two outfalls that discharge into the Rouge River on July 15, 2019. There was no outflow observed. A new round of dry weather screening is planned for August 2024 and results will be shared in a subsequent report.

U-M Flint

- UMF completed dry weather inspections on all 13 outfalls associated with the campus between the months of November and December 2019. The inspections were performed following the guidance in U-M's *2013 Dry Weather Screening Program Guideline for the University of Michigan*. Flow was observed at four of the outfalls during dry weather conditions. All four outfalls were sampled. Evaluation of the sampling analytical data indicates that these flows are not a significant contributor of pollution and do not pose a threat to human health or the environment, however; follow-up investigation activities are ongoing. Dry weather screening is planned for fall 2024.

IDEP-4 Public Reporting of Illicit Discharges

Public involvement in the reporting of illicit discharges to the storm water system is a voluntary program. Custodial & Grounds Services (CGS) and Logistics, Transportation & Parking (LTP) currently coordinate extensive recycling promotions with student housing and individual colleges on campus. These promotions include information regarding reporting of illicit discharges to EHS-AA, EHS-D, or EHS-F for follow-up. By means of its public education program, U-M advises the University community to report discharges for appropriate investigative and follow-up action.

The University maintains a 24-hour 911 emergency response system, which is coordinated and manned by DPSS on UMAA campus and DPS on UMD and UMF campuses. Any calls reporting dumping, accidental spills, etc. are dispatched from DPSS or DPS to EHS-AA, EHS-D, or EHS-F, respectively, for emergency response, containment, and control. In addition, calls can be made to EHS-AA, EHS-D, or EHS-F directly reporting such incidents for emergency response.

IDEP Activity **Measurable Goals**	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
The emergency response system on campus will be maintained by the University of Michigan Division of Public Safety & Security (DPSS) (24/7) for use by the public to report illegal dumping, spills or suspicious discharges at the University throughout the permit term. The number of calls received by the DPSS/EHS emergency response call system on potential discharges to the storm water system will be tracked for subsequent reporting. The number of incidents remedied as a result of these calls will also be tracked and reported annually.	FY 2009-2010 (annual)	✓	✓	✓

All Campuses

- A total of 28 outdoor incidents were reported via the UMPD/EHS-AA/EHS-D/EHS-F emergency response systems over the reporting period. Typically, the spilled materials were contained with spill kits; cleaned up using absorbent materials and removed for appropriate disposal by U-M's on-call emergency response team. Response activities involved leaks and spills of materials such as automotive fluids (gasoline, hydraulic oil, glycol, transmission fluid, diesel, power steering fluid, brake fluid, antifreeze, and motor oil), water treatment chemicals, and blood.

U-M Ann Arbor

- During this reporting period, UMAA personnel responded to 26 outdoor incidents. Most of the spills were small, ranging from a few milliliters to several gallons. Five (5) of the incidents resulted in spilled materials entering a storm drain, but only four (4) ultimately discharged to waters of the state. Three (3) of these discharges were turbid water from water main breaks and one (1) discharge was the result of a failed hydraulic line. Additionally, one (1) outdoor incident that UMAA personnel responded to was not believed to have originated from a U-M source nor did it discharge from a U-M outfall. However, EGLE was notified, as well as other local downstream MS4s, in order to communicate the incident and source tracking efforts. The incidents were reported to EGLE as required and resolved appropriately. The other outdoor incident where spilled material entered a storm drain but did not reach waters of the state, was contained within a catch basin sump and did not migrate further through the system. The spilled material was able to be absorbed and properly mitigated.

- The U-M has a 24-hour Emergency Response Team to quickly and efficiently respond to and mitigate releases of polluting materials on campus. The campus community is encouraged, through presentations, training, signage, and other educational materials, to report illicit discharges and spills to EHS-AA/EHS-D/EHS-F and to the U-M Police Department (UMPD) so appropriate measures can be taken to correct issues, which may impact storm water quality. The response team is primarily comprised of U-M staff as well as 24-hour emergency response vendors to efficiently respond to and mitigate releases on campus.

U-M Dearborn

- UMD had no reportable illicit discharges during the reporting period.

U-M Flint

- Two (2) outdoor incidents occurred on campus that required cleanup response. A paint/water mixture entered a storm drain but did not exit the catch basin and was appropriately cleaned up and removed from the storm drain. A second incident involved a hydraulic oil leak that did not impact any drains and was contained using absorbent materials that were then disposed of properly.

Table 7 Additional Illicit Discharge Elimination Program Activities

Activities

All Campuses

- Recycling Efforts – The U-M promotes environmental awareness by sponsoring recycling programs on campus. Educational materials have been developed that address student contributions to the U-M recycling effort, educate students on the types of recyclables and where they may be taken for recycling, and educate students on the impact that recycling has on the environment.

- The University continues to review owned facilities in an effort to identify discharges into the storm and sanitary systems. As part of this survey, any areas that contain suspect flows are noted for potential dye testing.

- Erosion Control – Part 91 of the Natural Resources Environmental Protection Act (NREPA) provides for a statewide soil erosion and sedimentation control program. This program outlines the proper provisions for water disposal and the protection of soil surfaces during and after construction and is adhered to by the U-M.

- Employee Training and Education – U-M personnel involved in the application of herbicides, pesticides, and fertilizers have been trained and are certified applicators through the State of Michigan Integrated Pest Management program. In addition to the courses taken through the Michigan Department of Agriculture, U-M trains all of its Grounds employees. Training programs will also be conducted to address the purpose and operation of BMP activities under this SWMPP. In addition, staff in various departments have received, or are in training to receive, certification from EGLE in Storm Water Management – Construction Site, Storm Water Management – Industrial Site or Soil Erosion & Sedimentation Control.

- Hazardous Materials Response – EHS-AA, EHS-F & EHS-D are instrumental in maintaining a safe and healthy environment for faculty, staff, students, and visitors. Routine training is provided to new faculty, staff, and students regarding hazardous materials and conditions at U-M facilities. The University also maintains spill response teams (U-M staff and contracted vendors) for each campus that can quickly and efficiently respond to and mitigate releases of hazardous materials.

- Hazardous Waste Disposal – EHS-AA is responsible for the appropriate collection and disposal of hazardous waste and hazardous materials used and generated by the Ann Arbor campus and other off-site U-M units. The program ensures tracking of the materials from point of generation through collection and ultimate disposal. Personnel are properly trained and appropriately licensed to handle the material and transport the waste on campus. Qualified contractors are used for ultimate transport and disposal off site. The EHS-D and EHS-F oversee the disposal of hazardous wastes on their respective campuses. EHS-D, EHS-AA, and EHS-F personnel are properly trained in the Resources Conservation and Recovery Act (RCRA) and the University utilizes qualified contractors for transport and proper disposal of waste off site.

- Plan Review – EHS-AA, EHS-D, and EHS-F review plans for the renovation of existing structures and the construction of new facilities. The plans are reviewed to identify potential environmental concerns and to ensure the protection of storm water quality and the storm water drainage system.

- Storm Water Basins – Storm water management basins are used to control storm water discharges from campus locations. The basins are designed to manage peak flows and remove sediment which can significantly reduce pollutant loads in receiving waters. A number of basins also provide for infiltration, reducing the total volume of runoff to surface waters of the State.

Activities

U-M Ann Arbor

- UMAA recycled approximately 185 tons of e-waste and 186,070 fluorescent lightbulbs this past fiscal year.

- UMAA oversees the disposal of hazardous waste. UMAA personnel are properly trained in RCRA regulations and the University utilizes qualified contractors for transport and proper disposal at approved off-site facilities.

- EHS-AA continues to work with U-M football stadium vendors/concession stands to prevent potential discharges into the storm water system. To reinforce proper waste management for these temporary operations, signage detailing procedures for proper grease and wastewater disposal will again be provided for the 2024 football season.

- EHS-AA requires that new building construction and building renovation projects resulting in new and/or modified internal piping be dye tested to confirm proper connection to the sanitary system. This requirement is in place for projects where more than 10 fixtures are impacted.

- EHS-AA conducts quarterly SWPPP inspections at seven fleet maintenance facilities. EHS-AA has an online Storm Water Pollution Prevention Plan (SWPPP) training module for all applicable operational staff and facility managers at fleet maintenance and storage yards involved in the U-M SWPPP program. Sixty-one (61) staff completed the online training between July 1, 2023 and June 30, 2024. EHS-AA continues to use the online training module for refresher training of U-M staff members.

- During this reporting period, 18 UMAA staff completed the SEMCOG IDEP Alert Observer Training and one (1) staff completed the IDEP Investigator Training.

U-M Dearborn

- UMD recycled a total of 1,756 lamps (e.g. fluorescent, high-pressure sodium, mercury vapor, and incandescent bulbs) and 9,341 pounds of various electronic waste. In addition, approximately 1,742 pounds of various battery types (e.g. lead acid, nickel-cadmium, lithium ion, nickel metal hydride, and alkaline) were recycled.

- EHS-D oversees the disposal of hazardous waste. EHS-D personnel are properly trained in RCRA and the University utilizes qualified contractors for transport and proper disposal off site.

Activities

- EHS-D routinely walks the campus and inspects loading dock areas, dumpsters, facilities operations and vehicle maintenance/storage areas, and refueling operations and construction activities to ensure that materials continue to be stored properly, secondary containment is functioning, and any outdoor storage containers remain in good condition.

- Two (2) staff completed the SEMCOG IDEP Alert Observer Training.

U-M Flint

- UMF recycled 15,797 lightbulbs (including fluorescent, mercury vapor, high pressure sodium, and incandescent bulbs) and other e-waste, totaling approximately 7.6 tons.

- EHS-F oversees the disposal of hazardous waste. EHS-F personnel are properly trained in RCRA regulations and the University utilizes qualified contractors for transport and proper disposal off site.

- EHS-F routinely walks the campus and inspects loading dock areas, dumpsters, facilities operations and vehicle maintenance/storage areas, and refueling operations and construction activities to ensure that materials continue to be stored properly, secondary containment is functioning, and any outdoor storage containers remain in good condition.

- Four (4) staff completed the SEMCOG IDEP Alert Observer Training.

v. Post-Construction Storm Water Control for New Development and Redevelopment Projects

The U-M has a program to address storm water runoff from new development and redevelopment projects. As part of this program, the U-M manages, reviews, and continually updates campus-wide planning to address storm water runoff from each new regulated development and redevelopment project. This program helps to ensure that controls are in place that will minimize and in some cases prevent impacts on water quality from new development and redevelopment projects that disturb areas greater than one acre or disturb areas less than one acre but which are part of a larger common plan of development.

Table 8 presents the status of each Post-Construction Storm Water Control activity, associated measurable goals as written in the SWMPP, and current or past activities supporting the measurable goals. Table 9 includes activities that go beyond the expectations of the original measurable goals.

Table 8 Post-Construction Storm Water Control Activities

PCSW-1 Post-Construction Storm Water Runoff

The University continues to review options for regional storm water management systems at locations where current or future construction is anticipated. This regional detention would include storage for construction or renovation projects that have limited space for on-site systems. The goal of the University is to protect receiving water quality and limit the rate at which surface water runoff discharges from any specific site during and following development or redevelopment to not exceed the pre-development hydrologic regime.

On previous projects where detention on site is not feasible the University has required a minimum of structural BMPs to improve the water quality leaving the site (sedimentation traps, etc.) and proposed regional containment within the runoff basin as the quantity control.

PCSW Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
By August 1, 2009, the Post-Construction Storm Water Requirements guideline which details the minimum treatment volume standard and the channel protection criteria was issued by U-M. The guideline is available on the EHS-AA website and in Appendix G of the SWMPP.	FY 2010-2011 (Mid-year)	✓	✓	

PCSW-2 Non-structural & Structural Best Management Practices

To meet the objectives, U-M may implement various non-structural and structural BMPs where appropriate. Non-structural BMPs are preventative actions that involve management and source controls. Examples of issues that are covered in non-structural BMPs used on campus include but are not limited to the following:

- *Buffers along sensitive water bodies*
- *Education programs for developers and the public about project designs that minimize water quality and quantity impacts*
- *Minimum disturbance of soils and vegetation;*
- *Restrictions on directly connected impervious areas;*
- *Preservation of the natural environment;*
- *Minimization of impervious surfaces; and*
- *Use of vegetated swales and natural storage.*

Structural BMPs are physical controls, including storage practices, which improve water quality. Examples of issues covered in structural BMPs used on campus include but are not limited to the following:

- *Wet ponds and extended detention outlet structures;*
- *Filtration practices such as grassed swales, sand filters, and filter strips; and*
- *Infiltration practices such as infiltration basins and infiltration trenches.*

PCSW Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
EHS-AA and/or AEC will review all construction and renovation plans for use of structural and non-structural BMPs to prevent receiving water quality from the impacts of development and limit the rate at which surface water runoff discharges from any specific site to not exceed the pre-development hydrologic regime. The number of sites implementing various non-structural and structural BMPs will be tracked annually for subsequent reporting.	FY 2008-2009 (annual)	✓	✓	✓

- The U-M utilizes a variety of structural and non-structural BMPs. Some are installed to comply with post-construction standards and others are installed as acts of good environmental stewardship and community benefit. Storm water controls installed or utilized during this reporting period include the following:

  - Snow Storage Program: EHS-AA, with the input of other F&O departments, develops a Snow Storage strategy that is updated each year to minimize impacts to the environment, storm water infrastructure, and active construction sites. Erosion eels are often used to protect storm drains and direct melting runoff appropriately.

  - Hubbard Road Recreational Fields: One aboveground infiltration basin was installed to meet the NPDES post-construction stormwater management requirements.

- There are over 305 structural storm water BMPs installed throughout the UMAA, UMF, and UMD campuses. http://ehs.umich.edu/environmental/water/stormwater/storm-water-control-measures/

PCSW-3 Operation & Maintenance of Best Management Practices

Any non-structural BMPs that are implemented at a facility are incorporated into day-to-day activities for the operation of the facility or into maintenance schedules. Structural BMPs related to storm water detention and retention basins are subject to scheduled maintenance inspections. Non-scheduled activities are completed as they arise.

PCSW Activity Measurable Goals	Initial Action Reported in:	Current Status		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
Storm water management basins on campus will be inspected annually, at a minimum. The number and frequency of inspections of storm water basins will be tracked for subsequent reporting. Maintenance issues identified during these inspections will be tracked until corrected.	FY 2008-2009 (annual)	✓	✓	✓

U-M Ann Arbor

- Annual inspections were completed on all 76 surface storm water management basins on campus by U-M personnel during this reporting period in spring 2024. Storm water management basins were also maintained through mowing, invasive plant removal, and controlled burns.

U-M Dearborn

- UMD does not have any aboveground storm water management basins.

U-M Flint

- UMF does not have any retention/detention basins on campus, but there is a bioswale at the Murchie Science Building. UMF Facilities & Operations conducts routine grounds area inspections. Drains and areas around drains are also visually inspected. If problems are observed, they are reported and corrected.

PCSW-4 Site Plan Review

The U-M has established programs to control the quality of storm water runoff from development or redevelopment activities through the review of site plans. This program is the same as that used for controlling storm water runoff on construction sites.

EHS-AA and/or AEC review all plans to ensure projects have adequate post-construction storm water management controls. The number of plan reviews will be tracked for subsequent reporting.	FY 2008-2009 (annual)	✓	✓	✓

U-M All Campuses

- U-M completed 269 plan reviews between July 1, 2023 and June 30, 2024, with 9 requiring a formal SESC Plan review and approval. Sites with greater than one acre of earth disturbance are evaluated to ensure they meet the PCSW control requirements.

Table 9 Additional Post-Construction Storm Water Control Activities

Activities
All Campuses • Construction sites are stabilized with the addition of permanent controls and vegetation to reduce the amount of sedimentation that could impact receiving waters. • EHS-AA, EHS-D, and EHS-F work with contractors and facilities staff to implement standard protocols to dye test the internal piping in new building construction and building renovation projects to confirm proper connections to the storm and sanitary sewer system. A program for confirmation of taps to exterior pipes is already in place.

vi. Construction Storm Water Runoff Control

In 1982, the U-M received approval from the Michigan Department of Natural Resources to operate as an Authorized Public Agency (APA) under the authority of Part 91, Soil Erosion and Sedimentation Control (SESC) of the Natural Resource & Environmental Protection Act, 1994 PA 451, as amended (Part 91). Reauthorization of U-M's APA status was received in 2004 from the Michigan Department of Environmental Quality. APA status allows the U-M to establish and manage the Soil Erosion and Sedimentation Control procedures on its properties. Construction activity at U-M may involve contractor or in-house construction activities performed by Facilities & Operations.

The overall CSW program accomplishes the following goal:

Provide and implement controls to minimize or prevent impacts on water quality from construction activity.

Table 10 presents the status of each Construction Storm Water Runoff Control activity, associated measurable goals as written in the SWMPP, and current or past activities supporting the measurable goals. Table 11 includes activities that go beyond the expectations of the original measurable goals.

Table 10 Construction Storm Water Runoff Control Activities

CSW-1 Site Plan Reviews

The U-M has established programs to control the quality of storm water runoff from development or redevelopment activities. Plans for new development are subjected to a U-M internal review process to ensure that storm water quality is adequately controlled during construction and after completion of the new development. Efforts are underway to insert storm water management controls into the front end of all projects. Examples of efforts on projects include control of sedimentation using silt screens or other measures, controlling sediment tracking from construction areas through increased street sweeping, and using hydroseeding to control runoff once construction efforts are completed. Reviews of all projects are performed by EHS-AA, EHS-D, or EHS-F.

CSW Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
Formal SESC plans are required for sites with earth disturbance (greater than 24 hours) of 1 acre or greater and projects (of any size) within 500 feet of "Waters of the State." The number of SESC site plan reviews will be tracked annually for subsequent reporting. This review process allows EHS-AA, EHS-D, or EHS-F to require projects to insert storm water management controls into the front end of all projects.	FY 2008-2009 (Annual)	✓	✓	✓

U-M Ann Arbor

- During this reporting period, 9 projects required a formal SESC Plan review and approval. One (1) project was required to apply for an EGLE Notice of Coverage.

U-M Dearborn

- UMD had no SESC plan reviews during this reporting period.

U-M Flint

- UMF had one project that required an SESC plan review during this reporting period.

CSW-2 Best Management Practices (for SESC on construction sites)

Best Management Practices are used for construction projects to prevent soil erosion and sedimentation from leaving the property. The following list represents examples of erosion and sedimentation controls for which specific BMPs have been developed. Copies of the BMPs can be found in the Manual and are used, as appropriate, based on the specific needs for a construction site. Note that not all sites will need to use all of these practices.

- *Access Roads*
- *Construction Barriers*
- *Tree Protection*
- *Buffer and Filter Strips*
- *Filter Fencing*
- *Storm Drain Inlet Filter Fabric*
- *Street Sweeping*

CSW Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
The use of BMPs is required on all projects under the approved SESC Procedures for the University. The number of projects using the BMPs identified above for SESC will be tracked annually for subsequent reporting. BMPs will be selected as appropriate for site conditions.	FY 2008-2009 (annual)	✓	✓	✓

U-M All Campuses

- Fifty-six (56) projects used a variety of SESC BMPs on their sites. Examples of BMPs included, but are not limited to, the use of vegetation, metal anti-trackout grates, inlet filter bags, silt fence, erosion eels, erosion blankets, straw wattles, turf reinforcement mats (TRMs)rip-rap, check dams, and dewatering filter bags.

CSW-3 SESC Inspections

Inspections of work sites are essential to controlling erosion and sedimentation concerns. Personnel from several departments have received SESC training from the EGLE. This provides a strong base of personnel to draw upon to regularly review maintenance, renovation, and construction sites. The inspections focus on requirements of site-specific erosion and sedimentation control plans for the project. Conditions can change at maintenance, renovation, and construction sites and the inspectors should make adjustments to the erosion and sedimentation control measures, as needed.

EHS-AA, EHS-D, EHS-F or their designee, who have received a EGLE SESC certificate of training, will inspect sites weekly during maintenance, renovation, and construction activities and following significant rain events to ensure compliance with the U-M SESC procedures and Part 91. Sites one acre and above will be inspected within 24 hours of the rain event to comply with National Pollution Discharge Elimination System (NPDES) inspection requirements.

Issues and concerns will be referred to the project/construction manager or designee for correction. The contractor will make any necessary repairs or corrections to the control measures within 24 hours, if waters of the state are being impacted. Other corrections, not impacting waters of the state will be made within 5 days. The project/construction manager will report any issues that cannot be corrected within 5 days to EHS-AA, EHS-D, or EHS-F. Additional detail as to why the correction cannot be made in that time frame will be required.

CSW Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
Sites will be inspected weekly and after significant rain events until final stabilization of the project site. The number of SESC inspections performed annually on U-M sites will be tracked for subsequent reporting.	FY 2008-2009 (annual)	✓	✓	✓

U-M Ann Arbor

- Approximately 1,252 weekly and after storm SESC inspections were performed between July 1, 2023 and June 30, 2024.

U-M Dearborn

- No SESC inspections were performed during this reporting period.

U-M Flint

- UMF had nine (9) SESC inspections for the College of Innovation and Technology (CIT) Building.

CSW Activity Measurable Goals	Initial Action Reported in:	Current Status		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
Select staff from EHS-AA, EHS-D, EHS-F, and AEC will be SESC trained by EGLE. The number of U-M staff who have received EGLE SESC training will be tracked annually for subsequent reporting.	FY 2008-2009 (annual)	✓	✓	✓
• Five (5) U-M staff have received comprehensive SESC training from EGLE and are current with the associated Certificate of Training.				
Select U-M staff from EHS-AA, EHS-D, EHS-F and AEC will be certified in Storm Water Management for Construction Sites. The number of U-M staff who have received EGLE certification will be tracked annually for subsequent reporting.	FY 2008-2009 (annual)	✓	✓	✓
• Ten (10) U-M staff are Certified Storm Water Operators in the State of Michigan for construction sites at the time of this report. • Four (4) U-M staff are Certified Storm Water Operators in the State of Michigan for industrial sites at the time of this report.				

CSW-4 Sedimentation Control During Maintenance Activities

Some maintenance activities do not typically have a formal design or specification prepared. They are performed on a work order or emergency basis by Facilities & Operations or other U-M departments such as Michigan Medicine or Athletics. The supervisor overseeing the maintenance activity will be responsible for ensuring appropriate sedimentation control measures are implemented during field work. These procedures will be used for routine operations; however, in emergency situations human life and the safety and operation of the facilities and infrastructure are of overall importance. In those cases, work will be performed to minimize any immediate danger and stabilize the situation, and sedimentation control actions will follow. This chain of actions may require the use of an outside contractor to clean the storm water drainage system following the maintenance activities to prevent or minimize sediment transport to the Huron River. In addition to the BMPs listed above, the following BMPs will be used by the maintenance supervisor during activities that disturb soil to the degree where sediment transport could occur.

CSW Activity Measurable Goals	Initial Action Reported in:	Current Status		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
The use of SESC controls is required for all maintenance projects involving earthwork. The number of SESC inspections performed annually on U-M sites will be tracked for subsequent reporting.	FY 2010-2011 (annual)	✓	✓	✓

- During this reporting period, U-M staff performed SESC inspections, as described above in CSW-3.

Table 11 Additional Construction Storm Water Runoff Control Activities

Activities
All Campuses • Contractors at U-M are required to clean/sweep construction areas and adjacent areas to prevent track-out from a work site. • The web links for the U-M construction safety requirements, storm water management requirements, and SESC requirements are all incorporated into contractor bid specifications and contract documents during the reporting year. This ensures that contractors are made aware of university policies and requirements to protect surface water while working on university property. • Twelve (12) individuals viewed the "Environmental Considerations for U-M Project Managers" online training module during this reporting period. • A street sweeper is recommended by U-M for contractor usage at construction sites to reduce the amount of sediment that could potentially reach receiving waters. • Cleaning of the storm water drainage system is on a preventative maintenance schedule to remove sediment buildup within the system and to lessen potential sediment impacts to receiving waters. • The post-construction storm water guidelines and soil erosion and sedimentation control requirements for construction projects are incorporated into the project specifications and bid documents. • EHS personnel from all campuses are circulating around campus daily to address reported issues as well as checking on various project areas (e.g. covering a dumpster, debris/litter, inappropriate outdoor storage by contractors, etc.). • Street sweeping of roads and parking lots/structures is implemented regularly on all campuses at least twice per year and on an as-needed basis. At UMF, the street sweepers are used in high priority areas more frequently such as at loading docks, near compost areas, and the Hubbard Parking area. • U-M personnel pick up litter and debris on a regular basis ranging from weekly to daily throughout the year.

vii. Pollution Prevention/Good Housekeeping for Municipal Operations

The University's storm water pollution prevention and good housekeeping initiatives include, but are not limited to the following six areas:

- *Structural Controls*
- *Roadways*
- *Fleet Maintenance*
- *Storm Sewer Labeling*
- *Flood Control Projects*
- *Pesticides and Fertilizers*

Each area has operation and maintenance Best Management Practices with the ultimate goal of reducing and in some cases preventing pollutant runoff from University operations to the maximum extent practicable. The overall P2/GH program accomplishes the following goal:

Develop and implement a program of operational and maintenance Best Management Practices to prevent or reduce pollutant runoff from University operations.

Table 12 presents the status of the activities supporting Pollution Prevention/Good Housekeeping for Municipal Operations, associated measurable goals as written in the SWMPP, and current or past activities supporting the measurable goals. Table 13 includes activities that go beyond the expectations of the original measurable goals.

Table 12 Pollution Prevention/Good Housekeeping for Municipal Operations

P2/GH-1 Structural Controls

Structural controls are permanent physical features that control and prevent storm water pollution. Each structural control has routine scheduled maintenance and long-term inspection procedures to ensure that they remove storm water pollutants to the maximum extent practicable.

Several retention and detention basins have been identified as part of the U-M storm water system. These structures receive direct run-off from the U-M storm water system and are defined in Appendix F [of the SWMPP]. *The U-M has provided a spreadsheet identifying additional structural controls with inspection and maintenance schedules in Appendix K* [of the SWMPP].

P2/GH Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
Storm water management basins will be inspected annually during the permit term. The number and frequency of inspections on the U-M retention and detention basins will be tracked for subsequent reporting.	FY 2008-2009 (annual)	✓	✓	✓

- Annual inspections were completed on all 76 surface storm water management basins on campus by U-M personnel in spring 2024. Storm water management basins were also maintained through mowing and invasive plant removal.

- EHS staff completed inspections of 43 permeable paver or porous pavement installations on the UMAA campus in spring 2024.

P2/GH Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
Maintenance cleaning of the catch basins and storm sewer system piping will be performed periodically, with higher traffic areas and those identified via service requests receiving more attention. The goal will be to clean all catch basins in the system at least once per 5-year cycle. The number of catch basins maintained will be tracked for subsequent reporting.	FY 2008-2009 (annual)	✓	✓	✓

U-M Ann Arbor

- Catch basins across the UMAA campus are cleaned and the sewer lines water-jetted. Liquid waste is decanted and drained to approved sanitary sewer locations and the remaining non-hazardous sediment and debris is transported off-site for disposal at an approved facility. To more effectively handle the storm and sanitary cleaning solids, UMAA constructed a covered storage pad for drying the solids. The solids are then loaded onto a dump truck or a roll-off container and transported to a sanitary landfill for proper disposal as non-hazardous waste.

- The UMAA has moved to a GIS-based system for catch basin cleanout which has improved tracking for reporting. During the reporting period, 513 catch basins were cleaned and approximately 250 cubic yards of debris was removed from storm lines, catch basins, manholes, and street sweeping activities.

- Sixty-six (66) underground structures including hydrodynamic separators, diversion structures, underground storage, and other water quality devices were inspected and/or maintained during the reporting period.

U-M Dearborn

- UMD continued implementing their 5-year cycle catch basin cleaning strategy and cleaned a total of 29 storm drain structures during this reporting period, resulting in 28,860 gallons of storm drain cleanout residue (water and sediment) being generated and properly disposed of.

- EHS-D installed a hard top storm cover over the 25 cubic yard roll-off waste container in February 2024. The spring-loaded system ensures that staff can manually open and close the storm cover after adding waste materials. All affected Facilities Operations personnel were trained on the operation of the storm cover. This replaced a tarp system (Figures 14 and 15).

Figures 14 and 15 New hard cover for roll-off waste container.

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U-M Flint

- At UMF, catch basins are inspected and cleaned out as needed by F&O staff.

By October 1, 2011, a list of municipal properties and structural storm water controls owned or operated by U-M will be created, which includes the type and number of properties and structural controls. This list will be kept on file.	FY 2011-2012 (mid-year)	✓	✓	✓

P2/GH-2 Roadways and Parking Structures

The University maintains numerous parking structures and surface parking lots throughout its campuses. Maintenance of the U-M roadways and parking structures incorporates sediment control activities. Street sweeping removes potential storm water pollutants before they are carried into receiving waters in runoff from a storm event. Street sweeping and leaf and litter collection is performed by the University in an effort to prevent large debris from entering the storm water system. Litter is disposed as normal municipal waste and leaves are composted in two locations that are well away from system catch basins or inlet structures. Maintenance activities on these structures and surfaces include street sweeping, leaf pick-up, litter and pollution controls, snow and ice removal, and roadside vegetative maintenance. These activities are discussed in greater detail below

P2/GH Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
Street sweeping, leaf and litter collection will be performed periodically throughout the permit term. The cost for disposal and estimated quantity of debris, trash, dirt, etc. disposed from the maintenance and cleaning/sweeping of numerous parking structures, surface lots and roadways throughout the University will be tracked for subsequent reporting.	FY 2008-2009 (annual)	✓	✓	✓

U-M Ann Arbor

- Approximately 555 cubic yards of waste were sent for disposal from the cleaning and maintenance of parking lots and parking structures throughout the UMAA campus. This does not include parking lot sweeping waste as that is accounted for in a total street sweeping amount, which includes street sweeping and catch basin clean out [SEE P2/GH-1 ABOVE]. The combined estimated cost for disposal, labor, and vehicle expenses is approximately $1,451,740. Labor costs include all maintenance related to the parking structures and surface lots including street sweeping, leaf pick-up, litter, snow and ice removal (including snow pile storage management), and roadside vegetative maintenance.

- UMAA personnel spent approximately 13,928 hours collecting litter campus-wide, which resulted in about 1,926 cubic yards of waste.

U-M Dearborn

- UMD personnel spent approximately 2,500 hours collecting litter campus-wide, which resulted in about 20 cubic yards of waste. An estimated $37,000 was directly spent cleaning/sweeping parking surfaces, structures and streets.

U-M Flint

- At UMF, seven (7) hours of labor at a cost of $231 was spent for street sweeping. Approximately 22 hours of labor at the cost of $812 was conducted for sweeping/cleaning parking lots and structures. Approximately, 2 cubic yards of waste was disposed from the sweeping and cleaning of parking lots and streets. Daily litter pickup for the remainder of campus involved more than 4,300 hours over the reporting period. The labor costs associated with cleaning, sweeping and litter pick up on campus during the reporting period are approximately $161,643. The total of all sweeping and litter waste yielded an estimated 290 cubic yards for disposal. Disposal costs are estimated at $3,000.

P2/GH Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
A strategy to reduce the runoff of TSS from paved surfaces to the maximum extent practicable, with a goal of reducing the annual TSS loading by 25% as compared to annual loading with no suspended solids controls will be developed (2010-2012) and implemented (2013) at the University. An estimate of the TSS loading reduction achieved through this strategy will be documented.	FY 2012-2013 (annual)	✓	✓	
Develop BMPs to control dust and suspended solids in runoff from unpaved roads and parking lots. A list of unpaved roads and parking lots will be created (2010-2011).	FY 2011-2012 (mid-year)	✓	✓	
The use of coal tar emulsions to seal asphalt surfaces will be prohibited, as required in the permit. Plan reviews for construction and renovation projects involving asphalt will include comments from EHS-AA prohibiting the use of coal tar emulsions for U-M projects. Comments on construction and renovation projects are kept on file at the EHS-AA office.	FY 2009-2010 (annual)	✓	✓	
Incremental annual reduction in the use of salt for de-icing to reach 50% reduction based on an average annual use of 2600 tons per year at UMAA from 1989 to 1999. The quantity of salt used for deicing will be tracked on an annual basis.	FY 2008-2009 (annual)	✓	✓	✓

U-M Ann Arbor

- UMAA used approximately 2,684 tons of bulk rock salt during this reporting period, which is an increase of approximately 3% from the average annual use amount of 2,600 tons per year from 1989 to 1999. The running average of bulk rock salt usage from July 1, 2008 to June 30, 2024, is 2,283 tons, which is a 13% reduction from the baseline of 2,600 tons per year.

U-M Dearborn

- UMD used approximately 300 tons of rock salt and four (4) tons of a magnesium and calcium chloride mixture in (5) gallon capacity pails and 25-pound bags.

U-M Flint

- UMF used approximately 50 tons of bulk salt during this reporting period. Additionally, 20 tons of bagged de-icing material (mixture of calcium, potassium, magnesium, and sodium chlorides) were used. Also, 4,500 gallons of MeltDown Apex-C that contains a portion of calcium and magnesium chlorides were used. The University continues to use salt alternatives where possible as part of the management of snow and ice on campus.

Increase the use of alternative de-icers annually to replace/supplement salt use. The quantity of alternative de-icers will be tracked on an annual basis.	FY 2008-2009 (annual)	✓	✓	✓

In the 2022-23-22 season, **UMAA** used the following alternative deicers:
Caliber M-1000 (magnesium chloride): 1,000 gallons

UMD used four (4) tons of a magnesium and calcium chloride mixture in five (5) gallon capacity pails and 25-pound bags.

The following alternative deicer was used at **UMF**:
MeltDown Apex-C (calcium chloride, magnesium chloride): 4,500 gallons.

P2/GH Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
All applicators (technicians) will be trained in pesticide and fertilizer use. The number of pesticide and fertilizer technicians will be tracked on an annual basis.	FY 2008-2009 (annual)	✓	✓	✓

U-M Ann Arbor

- The UMAA currently employs approximately 77 certified pesticide applicators and six (6) certified in Integrated Pest Management.

U-M Dearborn

- UMD has three (3) certified pesticide applicators.
- UMD has a contract with TruGreen to conduct large treatments/spraying. TruGreen has a non-phosphorus policy.

U-M Flint

- Six (6) staff are certified pesticide applicators and two (2) staff are certified in Pest Management. Staff attend State of Michigan training routinely to maintain their certifications.

Eliminate the need for vegetative replacement due to salt damage to the maximum extent practicable. The need for replacement vegetation will be tracked for subsequent reporting.	FY 2008-2009 (annual)	✓	✓	✓

U-M Ann Arbor

- At UMAA, only de minimis amounts of vegetative replacement was required during the 2023-2024 fiscal year. Replacement costs were not tracked due to the limited nature.

U-M Dearborn

- To replace vegetation damaged from deicing agents and vehicle tire damage during the reporting period, UMD used approximately 200 pounds of grass seed across the campus.

U-M Flint

- Limited vegetation replacement was needed at UMF during the reporting period involving approximately 100-150 pounds of grass seed to address approximately 3,000 square feet of damaged turf.

P2/GH-3 Fleet Maintenance

The U-M owns and operates a large fleet of vehicles, including buses and cars, which is maintained by Logistics, Transportation & Parking. The U-M also owns and operates a fleet of equipment, including lawn mowers and rototillers that is maintained by Custodial & Grounds Services. All vehicles and equipment are regularly maintained to ensure proper and effective operation as well as prevent impacts on storm water quality.

P2/GH Activity Measurable Goals	**Initial Action Reported in:**	**Current Status**		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
In 2010-2012, Develop SWPPPs for all fleet maintenance and storage yards/facilities at U-M.	FY 2012-2013 (mid-year)	✓	✓	
In 2013, implement all SWPPP for fleet maintenance & storage yards at U-M.	FY 2013-2014 (mid-year)	✓	✓	✓

- On-going quarterly inspections are conducted at fleet maintenance and storage yards/facilities on all campuses. An annual review and update of each SWPPP is also conducted. Documentation is kept on file for a minimum of three years.

P2/GH-4 Storm Sewer Labeling

As of March 10, 2004, any outfall structure that the U-M constructs or installs that discharges storm water directly to waters of the State will provide permanent identification (e.g. label, color coding, or other identifying characteristic).

The storm drains placed on campus come with the message "Dump No Waste - Drains to Waterways" engraved on it. Storm drain grates already in place will be marked with a curb marker with the message "Keep our Michigan Waters Blue: Dump No Waste - Flows to River" or similar.

All U-M storm drains will be marked with the message "Dump No Waste - Drains to Waterways", "Keep our Michigan Waters Blue: Dump No Waste - Flows to River" (or similar message) during the permit cycle. The number of storm drains marked will be tracked annually for subsequent reporting.	FY 2008-2009 (annual)	✓	✓	✓

U-M Ann Arbor

- Seventy-three (73) storm drain markers were installed/replaced at UMAA during the reporting period on catch basins, storm drain inlets, and trench drains draining to the storm water network throughout campus. Special attention is given to higher use walkways on Central Campus (the Diag, Medical campus, Law Quad). Existing storm drain markers are replaced, as needed, due to wear, fading, or loss.

U-M Dearborn

- UMD did not install/replace labels this past fiscal year.

U-M Flint

- No labels were installed during this reporting period. However, significant progress was made in label installation in 2023.

P2/GH-5 Pesticides and Fertilizers

The application of pesticides and fertilizers is controlled by several departments including Custodial & Grounds Services, Facilities Maintenance, Athletics, Matthaei Botanical Gardens, Radrick Farms and Nichols Arboretum, depending on the location. The University employs Integrated Pest Management (IPM) methodology, an ecological approach to pest management, in University buildings. All available techniques are used to reduce pest populations to acceptable levels while minimizing the potential impact of pesticides upon humans and the environment.

P2/GH Activity Measurable Goals	Initial Action Reported in:	Current Status		
		In Compliance	*Completed as Previously Reported*	*Ongoing Effort (see below)*
In 2010-2011, develop an education program for U-M staff involved in fertilization of turfgrass at U-M. Also include a strategy to disseminate the requirements to contractors at U-M.	FY 2011-2012 (mid-year)	✓	✓	
In 2011-2012, implement a turfgrass fertilization education program for appropriate U-M staff and contractors. Identify educational information available/developed for each target audience applicable at U-M.	FY 2011-2012 (mid-year)	✓	✓	✓

All Campuses

- U-M provides on-going training to applicable staff about the NPDES permit restrictions on the use of fertilizer containing phosphorus. Applicable staff also stay current on new information/technologies as it relates to turf and landscape management.

U-M Ann Arbor

- Seventy-seven (77) staff are certified pesticide applicators and six (6) staff are certified in Integrated Pest Management. Staff attend State of Michigan training routinely to maintain their certification.

- UMAA has a campus-wide certification from the Michigan Turfgrass Environmental Stewardship Program (MTESP). MTESP certification is designed to encourage strategies to prevent pollution and recognize environmentally sound management practices. The program includes sections dedicated to promoting fish and wildlife habitat, indigenous vegetation and water quality protection.

- As part of reaching the U-M goal to "Reduce the Volume of Synthetic Land Management Chemicals Used on Campus by 40%," organic fertilizer now comprises an estimated 75% of fertilizer used by Grounds Services and 20% of that used by Radrick Farms and U-M Golf Courses. Ground Services is also piloting a low impact broadleaf weed control on approximately 25% of campus, including the Diag. Additionally, only certified organic products are being used in the Northwood Community Apartments 4 and 5 areas (except cases of tough-to-remove poison ivy). https://ocs.umich.edu/wp-content/uploads/2020/01/2019-Goal-Fact-Sheets-Final.pdf

Table 13 Additional Activities for Pollution Prevention/Good Housekeeping for Municipal Operations

Activities
U-M Ann Arbor • The Radrick Farms and U-M Golf courses have extensive green certifications for their responsible land management practices, including the Washtenaw County Community Partners for Clean Streams, which specifically targets water quality. They also utilize expertise from the Michigan Turfgrass Environmental Stewardship Program (MTESP), the Michigan Clean Corporate Citizens Program, the ePar environmental management system and the Audubon Cooperative Sanctuary Program. While the Radrick Farms Golf Course is outside of the urban area boundary, U-M still considered these certifications worth mentioning. • The UMAA Radrick Farms Golf Course and University of Michigan Golf Course were awarded the Clean Corporate Citizen (C3) designation from the EGLE in 2014 and 2015, respectively. According to Jim Sygo, formerly of EGLE, "Michigan's C3 program is one of the most rigorous and long-standing environmental stewardship programs in the nation, requiring facilities to have an active Environmental Management System; a strong environmental compliance history; and pollution prevention goals and measures in place." While the Radrick Farms Golf Course is outside of the urban area boundary, U-M still considered this award worth mentioning. • UMAA updated the snow storage guidance document in December 2023. In an effort to reduce negative impacts associated with snow storage on UMAA campus, EHS-AA developed improved general requirements for all approved snow storage sites on campus and also developed new site specific requirements. In addition, EHS-AA met with appropriate parties (e.g., Athletics, Parking & Transportation) to review inspections of snow storage locations and discuss findings, if any. • In September of 2011, former U-M President Mary Sue Coleman revealed several sustainability goals for the entire University. One such goal is to reduce synthetic land management chemicals by 40% by the year 2025, as compared to a 2006 baseline measurement. These sustainability metrics are tracked on a calendar-year basis (Figure 8). For the 2022 calendar year, the use of synthetic land management chemicals has been reduced by 46%, as compared to the 2006 values. • The Office of Campus Sustainability is working toward setting new university goals across a range of operational and cultural areas, including climate action, waste reduction, sustainable and resilient grounds, and more. Input is being gathered with help from several Facilities & Operations units, Athletics, faculty and students.

Activities

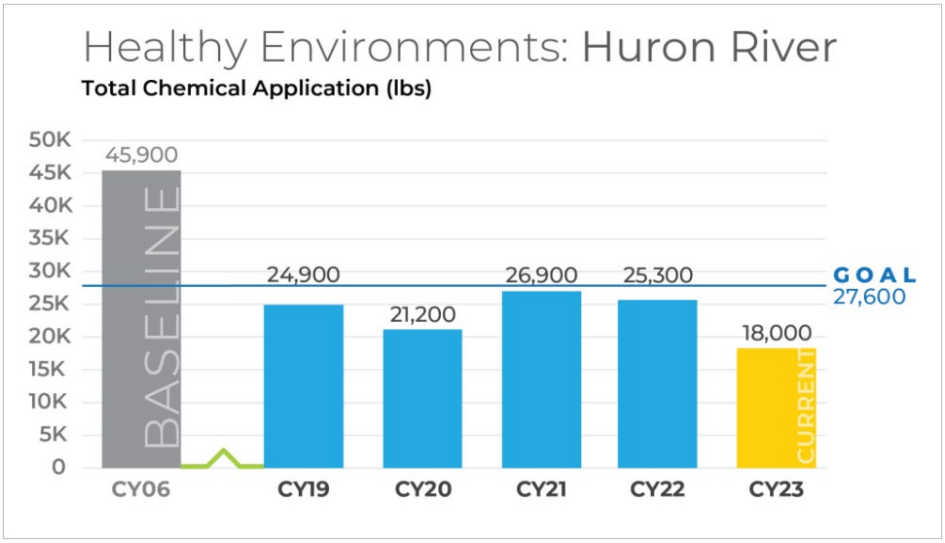

Figure 16 Graph excerpted from the U-M Office of Campus Sustainability web page.

- In October 2015, former U-M President Mark Schlissel reiterated the importance of the sustainability goals and especially the need for education and community awareness programs. U-M's progress toward reaching these goals are tracked on the Planet Blue and Office of Campus Sustainability web pages:
  Planet Blue: http://sustainability.umich.edu/
  Office of Campus Sustainability: http://sustainability.umich.edu/ocs
  Efforts are underway to establish new goals for the UMAA campus to work towards in the coming years.

- UMAA implements campus wide recycling in all buildings and encourages proper management of waste whether one is on campus or at home. Building compost collection is also an available service on campus. UMAA promotes and provides support with various 'Zero Waste' events, including zero waste at Michigan Stadium, to further promote the proper disposal of waste. Nearly all materials purchased in Michigan Stadium can be recycled or composted.

- Helping to keep waste out of our waterways and encourage waste-reducing behavior, U-M participated in the national Campus Race to Zero Waste (formerly known as RecycleMania) competition in Winter 2024. U-M won the Zero Waste category for large campuses.

- With the support of EHS staff and funding, U-M College of Pharmacy hosts in biannual Safe Medication Disposal Events. These events help keep medications from reaching receiving waters. During this reporting period College of Pharmacy students staffed area pharmacies during orientation week to help collect area residents' unused or expired medications. Since these events began in 2014, more than 7,500 lbs. of waste has been collected.

- The U-M has a Tobacco-Free University Premises policy that has significantly reduced cigarette debris from campus properties.

Activities

U-M Dearborn

- The two rain gardens on the UMD campus are located at the Environmental Interpretive Center (EIC) and they demonstrate methods of keeping storm water on site. A collaboration of various organizations including Wayne County Master Gardeners, the Student Environmental Association, and individuals from the surrounding communities has helped this garden grow. They are maintained by multiple student interns and multiple volunteers who have put in approximately 200 hours maintaining the rain gardens and the Community Organic Garden.

U-M Flint

- A new wing of the Murchie Science Building has received LEED Silver certification for energy efficient design, construction, and operations. This is UMF's first building to attain this status for a commitment to sustainability. The building's storm water management system reduced the amount of runoff from the site. Additionally, the new system will improve water quality by removing sediment that would otherwise flow into local water sources.

- UMF has continued to staff the UMF Office of Sustainability with a full-time staff member and supplements with part-time student staff to assist with campus efforts to meet carbon neutrality goals and enhance sustainability education and awareness on campus. The Office of Sustainability is dedicated to developing sustainable solutions at UMF through community involvement, applied and interdisciplinary research, and the talents of our operational team. Learn more at https://www.umflint.edu/sustainability/

2) Environmental Impacts –

Provide an assessment of the pollution reduction and probable receiving water quality impacts associated with program implementation. Include any negative water quality impacts that may have occurred as a result of any illicit discharges or accidental spills during the past year.

A major goal of the many BMPs identified and implemented at the University is to reduce the discharge of sediment and associated pollutants to receiving waters. The control program begins in the project design phase, by providing guidelines for storm water management and soil erosion and sedimentation controls and continues through the construction phase of the many projects on campus. The BMPs below have been implemented at the University. Probable impacts to water quality from these BMPs are taken from the EGLE's *Index of Best Management Practices/Individual Best Management Practices*.

- Catch Basins/Cleanout Procedures: These procedures are reasonably effective in protecting sewers from receiving loads of coarse solids.

- Oil/Water Separators and Hydrodynamic Separators: These devices remove coarse sediment and oils from storm water prior to delivery to a storm drain network, the ground, or other treatment.

- Storm Water Management Basins (surface and underground): Although the primary function of these basins is to detain/retain large quantities of storm water, the design also provides for sediment deposition within the basin structure, which can significantly reduce sediment and the pollutants (e.g., phosphorus) associated with them. Detention basins can be effective at removing sediment, non-soluble metals, organic matter and nutrients through settling. Storm water management basins can be very effective in reducing sedimentation of downstream areas. Coarse and medium size particles and associated pollutants will settle out in the basin. Suspended solids, attached nutrients, and absorbed non-persistent pesticides may break down before proceeding downstream. Basins designed to infiltrate storm water also increase recharge to ground water.

- Street Sweeping: This practice removes 50-90% of street pollutants from impervious surfaces that could potentially enter surface waters through storm sewers or direct surface discharges. Street sweeping can also make road surfaces less slippery in light rains, improve aesthetics by removing litter, and control pollutants.

- Illicit Connections – none

- Illicit Discharges: U-M's 24-hour emergency response team and onsite personnel were able to prevent a majority of outdoor spills (21 of 26) from entering the storm sewer system. Of the five (5) spills that did enter the MS4, only four (4) required notification to EGLE, and the remaining spill was able to be mitigated with no discharges to surface waters of the State or another MS4. Please see section 1).b). for a description of the four (4) reported incidents.

  - As was previously reported, there is an ongoing investigation of a low-flow discharge (<3 gallons per hour) to Millers Creek on U-M's North Campus. Field screening and laboratory follow-up testing indicate that the discharge has an elevated conductivity. The water is clear, with no odor or staining noted at the outfall. Initial investigation, including dye testing and televising of the storm lines and underdrains, has indicated that there are no cross-connections present. U-M continues to evaluate the possible source of the discharge.

3) Water Quality Assessment –

Provide an assessment of the water quality conditions within the jurisdiction.

Huron River
The following information was compiled by the HRWC. Note that this discusses a water quality monitoring program in the watershed as a whole and is not exclusive to UMAA.

Water Quality Data

Permittees within the Middle Huron River Watershed agreed to work with the Huron River Watershed Council to develop and conduct an annual water quality monitoring program to collect data and assess the water quality within the river and its tributaries. In the Middle Huron River Watershed, there are five stormwater-related TMDLs. While the current permit does not specifically require reporting on TMDLs, Permittee and watershed partners have funded monitoring to determine progress toward meeting each TMDL. This monitoring program is also used in determining the status and trends of water quality parameters within the Middle Huron River Watershed affected by stormwater. HRWC submitted a plan for this monitoring as an appendix to Storm Water Management Plans (SWMPs), and subsequent permit applications, submitted by permittees within the watershed. That appended plan is titled "Monitoring Progress for TMDLs in the Middle Huron Watershed."

HRWC conducts water quality monitoring annually from April through September at eleven long-term sites in the Middle Huron River and its tributaries, including Mill, Boyden, Honey, Allens, Traver, Millers, Malletts, Fleming, and Swift Run Creeks. Long-term sites help HRWC determine the current status and changing conditions over time. HRWC also monitors for a single season at investigative sites located upstream of selected long-term sites to gain a better understanding of upstream conditions. In recent years, investigative sites include: Willow Run at Van Buren Park (2022), Letts Creek at Veterans Park in Chelsea (2022), Arms Creek at Scully Road (2023), Huron River at Superior Road in Ypsilanti (2023), Superior Drain at Clark Road (2024), and Huron River at Huron River Drive (2024). In total, 17 sites were monitored across the 2022, 2023, and 2024 seasons. Since the beginning of the Chemistry and Flow Monitoring program in 2003, over 60 sites have been sampled and over 500 volunteers have been trained and involved in the program.

At each site, volunteers used a hand-held YSI multimeter to collect real-time data on conductivity, dissolved oxygen, pH, temperature, and total dissolved solids. The Ann Arbor Drinking Water Treatment Plant laboratory analyzed the volunteer-collected samples for total phosphorus, total suspended solids, *Escherichia coli*, nitrate, nitrite, and chloride concentrations.

HRWC also collaborates with researchers at the University of Michigan to install and maintain a network of real-time water level and flow sensors. Water level and flow sensor data is publicly available at maps.open-storm.org. HRWC presents the results of these monitoring activities and updates a dynamic report following the inclusion of results through September. The latest report includes data through our 2023 monitoring season and is available at www.hrwc.org/washtenaw-results. HRWC also shares data via a geographically navigable, interactive data explorer web tool (www.hrwc.org/maps). This portal includes all chemistry, habitat, biota, and natural area information collected within the Huron River watershed and is updated at the end of the season after data is quality-assured.
Much of this data analysis was also included in the evaluation of four water quality impairments within the watershed. Based on this analysis and discussion with watershed partners, implementation plans were developed and submitted to EGLE for each of the following five TMDLs:

A. Ford Lake and Belleville Lake – impaired for excessive phosphorus
B. Huron River between Argo and Geddes Dams – impaired for pathogens
C. Malletts Creek – impaired for aquatic life and habitat
D. Swift Run -- impaired for aquatic life and habitat
E. Honey Creek – impaired for pathogens

Water Quality Summary
In general, monitoring data on watershed stressors shows the following key results in the Middle Huron River Watershed:

Phosphorus
Averaged annual TP concentrations in the main stem of the Huron River increase from upstream to downstream and tend to decrease over the course of the monitoring program history (2003 to 2023). TP concentrations at in the Huron River at North Territorial in Hudson Mills Metropark (MH01) are much lower than at the Huron River at East Cross St. in Riverside Park (MH11), with the mean and median values for eight of the nine previous years falling below the 0.03 mg/L TMDL target for Ford and Belleville lakes. As water flows downstream to MH11, the final sampling point before Ford and Belleville Lakes, multiple tributaries (i.e. all 9 other long-term monitoring sites) contribute additional nutrients from watersheds draining a variety of land uses, mainly urban and suburban areas of Ann Arbor. Point sources such as wastewater treatment plants in Dexter and Ann Arbor also input TP into the river before the MH11 sampling location. These inputs are reflected by the generally higher TP concentrations recorded at MH11. Overall, the median and average concentrations at MH11 have trended downward since 2014 when the site was first added to the monitoring program (linear regression of means: slope = -1.8 ug/L, R-squared = 0.5, p-value < 0.05), but average and median values have been above the 0.03 mg/L target, at around 0.05 mg/L for the last five years.

TP concentrations at tributaries within the Middle Huron River watershed are variable within a single site and among sites, but all have average and median values above the 0.03 mg/L target. That said, most tributary monitoring sites show an overall decreasing trend in TP concentrations over time with many of the lowest mean and median values recorded in 2023. This decreasing trend in TP has been confirmed by load estimate analyses. One of the smallest creeksheds with the least amounts of impervious surfaces, Boyden Creek, has the lowest recorded TP concentrations across all sites with the lowest average and median values recorded in 2023 of 0.022 mg/L and 0.023mg/L, respectively. Mill Creek, the other largely agricultural drainage, had some of the lowest recorded TP mean (0.038 mg/L) and median (0.039 mg/L) values in 2023 with the lowest maximum value ever recorded at the site (0.054 mg/L). These lower TP concentrations at Mill Creek in 2023 are especially notable because this creekshed was named as one of the largest nonpoint source inputs of TP to Ford and Belleville Lake in the TMDL. This is, however, only a decrease seen in one year of data.

TP concentrations at sites draining urban areas are generally higher than concentrations at sites draining agricultural or more mixed land use areas. For example, Swift Run, a small creekshed that drains primarily commercial and residential areas, has the highest recorded TP concentrations overall. In 2023, TP concentrations at Swift Run were lower than most other years, but the average (0.071 mg/L) and median (0.066 mg/L) were still more than twice the 0.03 mg/L TMDL target. Other urban sites also had some of the lowest recorded TP mid-value concentrations in 2023, but most still tended to be higher than sites draining less impervious land. One exception is Allen Creek, which has seen a general decrease in TP since 2014 apart from the year 2020 (this year has half the number of data points compared to other years that may skew the mean and median for this year). The lowest recorded median at this site was reported in 2023 with a value of 0.028 mg/L.

The observed trends along the main stem of the Huron River suggest that efforts to reduce TP in stormwater runoff are working, but stormwater runoff is still a major pathway of overall phosphorus loading to the middle Huron River. These decreases in TP are clearer and confirmed when evaluating changes in TP loads rather than concentration.

Bacteria

HRWC has monitored each of the major tributaries (though not direct drainages) in the watershed for E. coli since 2006. At most sites, volunteers collect single samples twice per month from April through September, rather than triplicate samples weekly, though HRWC has implemented triplicate sampling at select sites on a rotating basis to compare results. However, the methods do not exactly replicate EGLE standard methods. HRWC results may be somewhat more variable for a single sample, but, since there are a greater number of samples than with the EGLE approach, statistical representations of site results should more accurately reflect the true bacteria concentrations. Overall, HRWC's data on counts for E. coli and fecal coliform bacteria in the Middle Huron River watershed vary widely.

E. coli values are highly variable in the river, but geomeans and medians for both the most upstream and downstream Huron River sites are less than the 300 counts/100 mL single event, full body contact standard for all monitored years.

Bacterial counts at the most upstream river site, MH01, are very low, reflective of primarily natural inputs and lake exposure upstream. For example, in 2023, the geomean and median values at the site were 14 counts/100mL and 19 counts/100mL, respectively. Bacterial counts at this site have only ever exceeded the full body contact standard three times in the 22-year monitoring record, none of which have occurred within the last six years. The downriver site, MH11, has had slightly higher E. coli counts over the years. The 2023 geomean and median values at the site were 88 counts/100mL and 122 counts/100mL, respectively, which are below the low monthly standard of 130 counts/100mL. Most E. coli values at MH11 stay below the single-sample recreational standards. Counts have only exceeded the partial body contact standard (1000 counts/100mL) two times, once in 2017 and in 2019, and the full body contact standard has only been violated twice in the last four years in 2020 and 2022. These high E. coli values were observed during single sampling events and generally after storms.

Overall, there has been a general decrease in the magnitude and number of bacterial measurements above the full body contact standard at MH11. This may be reflective of the observed decreases in E. coli counts at some tributary sites. These low E. coli counts are encouraging, especially with the new statewide E. coli TMDL, and tend to support the health and safety of water recreators over the majority of river conditions.

E. coli counts at the tributaries within the Middle Huron River watershed have shown some decreasing trends over time at sites such as Malletts, Swift Run, and Traver creeks with a significant decreasing trend documented at Allens Creek. Despite signs of improvement, these sites still have E. coli counts that often exceed the standards for full-body contact. Other sites also show signs of improvement, with generally lower maximums over the last 5 years and decreasing geomeans and medians. In 2023, some of the lowest E. coli geomeans and medians were recorded at Boyden, Honey, and Fleming creeks. One exception is Mill Creek, a highly agricultural drainage, which has had three of its four highest geomeans and medians in the last three years. Further investigation of potential sources, in addition to past bacterial source tracking, is necessary at this site to address these increases.

Total Suspended Solids and Macroinvertebrates

TSS concentrations in the main stem of the Huron River have remained below the target threshold of 80 mg/L over the course of the monitoring history. TSS concentrations at MH01 generally range between 1.5 and 3.6 mg/L. Despite the inputs of TSS from tributaries, including those listed as impaired for sedimentation, TSS concentrations only increase slightly downstream at MH11 with a range between 4.75 mg/L and 9.1 mg/L. No values at MH11 have ever exceeded the 80 mg/L target. In fact, the maximum value ever recorded at MH11 was 41 mg/L in 2018. Similar maximum values were observed in 2022 and 2023, respectively. These ranges suggest that sedimentation in the river is not a habitat impairment at either end of the watershed, though it could be impaired in unobserved river reaches.

Most TSS concentrations at the tributaries within the Middle Huron are below the state standard, but storms can generate turbid runoff with values above this threshold. Four creeks – Boyden, Honey, Malletts, and Swift Run creeks – have had no samples above 80 mg/L in the last 5 years. These results suggest that the stream bank erosion conditions in Malletts and Swift Run are improving and meeting the TSS targets outlined in their respective 2004 TMDLs to protect biota. The other five tributary sites had at least one spike in TSS in the last five years with the highest spikes recorded in 2020 at Millers Creek (590 mg/L) and in 2021 at Mill Creek (222 mg/L).

HRWC also coordinates a macroinvertebrate monitoring program, which analyzes benthic communities at 25 sites in the Middle Huron annually in April and October, and then looks for only stoneflies in January prior to them emerging in late winter (see Table 1). Most sites in the Middle Huron show a stable, healthy aquatic insect community. However, some show significant improvements like the highly urban Malletts Creek and the suburban Fleming Creek. The problems areas are Honey Creek, which is declining at both sample sites, Letts Creek which has low diversity and poor IBI score, and Swift Run and Millers Creek, which has very low insect diversity and counts. See Table 14 at the bottom of this report for a complete analysis of the macroinvertebrate trends for the Middle Huron River watershed.

In addition to the TMDL-related parameters measured in the HRWC water quality monitoring programs, HRWC also observed the following results on non-regulated parameters:

- **Nitrate**: An examination of nitrate levels shows that median concentrations for monitoring sites measured from 2003-2023 ranged from 0.20 mg/L at MH01 to 1.1 mg/L at MH11. The median concentration at MH11 suggests that the water entering Ford and Belleville lakes is considered eutrophic with respect to nitrogen more than 50%

of the time. There are some higher concentrations of nitrate (medians ≥ 0.5 mg/L) in monitored tributaries, namely those draining agricultural land (e.g. Boyden, Mill, and Honey creeks), that contribute to these high downstream concentrations, but all mean and median values are below 1 mg/L.

- **Nitrite**: Most nitrite concentrations in the main stem of the Huron are below laboratory detection levels or below the lower limit of normal nitrite concentrations (0.01mg/L). Like TP and nitrate, median nitrite concentrations are slightly lower upstream than downstream. Even still, 75% of all nitrite values at MH11 are below 0.012 mg/L.

- **Conductivity:** Due to both natural weathering processes as well as increased inputs, conductivity increases along the middle Huron River from upstream to downstream. Median conductivity over time at MH01 is 683 µS/cm and at MH11 is 791 µS/cm. Both values fall within the natural conductivity range for the geological region of the watershed, but the MH11 median is near the upper limit for healthy waters (800 µS/cm). There are several tributaries that drain urban and suburban areas between MH01 and MH11 that have extremely high conductivity. The urban monitoring sites of Allen, Millers, Malletts and Swift Run creeks all have particularly high conductivity values, but so does Honey Creek, even though it is a mixed land use creekshed. Millers, Malletts, and Swift Run creeks have the worst conductivity overall with means and median values consistently above 1000 µS/cm over the period of record and measured values above 2000 µS/cm multiple times over the last five years. The high conductivity levels at Millers, Malletts, and Swift Run creeks coincided with high chloride levels, suggesting potential salt sources. Most chloride concentrations (~75%) at these three sites are above the state aquatic maximum level (320 mg/L) with the highest concentrations observed in Millers Creek. HRWC's additional source tracking in Millers Creek found that the highest conductivity originated north of Plymouth Road, likely from a previous road salt storage location. Together these findings suggest road salts are a major contributor to high conductivity at these urban sites and are likely impacting aquatic life in these creeks.

- **Dissolved Oxygen**: DO measurements in the Middle Huron River watershed typically meet state standards. DO concentrations are often near the respective water temperature 100% saturation values following typical seasonal trends with high concentrations in the spring when water temperatures are low that then decrease during the summer when water temperatures rise. There have only been 4 instances of DO falling below the 5 mg/L threshold for aquatic life in the main stem of the river, none of which have occurred in the last eight years. On rare occasions low dissolved oxygen has been measured below this threshold at six of all nine monitored tributaries. Swift Run, however, is the only tributary that has experienced low DO since 2015 with two records in 2016, one in 2017, one in 2021, and one in 2023.

- **pH**: The Middle Huron River watershed has stable pH values between the acceptable range of 6.5 to 9. Most pH values in the Middle Huron River and tributaries fall between 7.5 and 8.3. pH is more stable in the main stem of the river with both the average and median values remaining constant around 8.2 at the most upstream (MH01) and downstream (MH11) monitoring sites over the course of the monitoring history.

- **Temperature**: The monitoring season occurs during the spring and summer months when water temperatures increase. Temperatures in the Huron River start cold in early April (i.e. between 5 – 10°C) and warm into the summer months (generally between 20 – 30°C). There have only been 6 water temperature records throughout the 22-year monitoring history that have exceeded this threshold. Most of those exceedances (i.e. 5 samples) occurred at the most upstream Huron River monitoring station at North Territorial Road. All these exceedances were short lived and occurred in the month of July in 2011, 2012, 2013, and 2016 during periods of above average atmospheric temperatures. This Huron River site is shallower than MH11, making it more sensitive to atmospheric temperature changes and sun exposure. Since there are deeper water sections upstream and downstream of MH11, these high temperature periods likely do not have a major impact on aquatic species.

Table 14: 2023 HRWC macroinvertebrate monitoring results from Middle Huron sample sites

Site #	Site Location	River Roundup Metrics	Insect Family Diversity	EPT Family Diversity	Sensitive Family Diversity	MiCorps WQR	# of Stoneflies Families during Stonefly Search		Comments
26	Huron River: Zeeb Road	Spring 2023	13	7	3	3.9, V. Good	Winter 2023	2.0	This section of the Huron River is the most diverse in macroinvertebrate life of any that HRWC monitors. (1996-2023) (Its overall rating gets downgraded because the river is so big here, and we would hope to see even higher diversity than we do!) This site is hard to sample as it gets quite deep.
		Spring Avg. since 2020	13.0	7.0	3.0	3.9, V. Good			
		Fall 2023	14	7	2	4.0, V. Good	Average since 2020	2.0	
		Fall Avg. since 2020	17.3	7.7	3.0	4.0			
22	Huron Creek: Dexter-Pinckney Road	Spring 2023	No sample				Winter 2023	3.0	This site is showing significant long-term increases in fall EPT samples and spring total families and EPT samples. Stoneflies are abundant and consistently found (1996-2022). This is a wonderfully diverse location.
		Spring Avg. since 2020	16.0	9.0	4.0	3.6, V. Good			
		Fall 2023	No sample				Average since 2020	2.7	
		Fall Avg. since 2020	10.0	5.0	3.0	3.9, V Good			
84	Fleming Creek: Galpin Road	Spring 2023	Not sampled				Winter 2023	1.0	No significant changes over time. Winter stoneflies are always found here in high numbers (2004-2023).
		Spring Avg. since 2020	Not sampled						
		Fall 2023	Not sampled				Average since 2020	1.7	
		Fall Avg. since 2020	17.5	3.5	0.5	5.2			
62	Huron River: Bell Road	Spring 2023	Not sampled				Winter 2023	1.0	This site is often difficult to sample because of fast flows, especially in the spring. Stoneflies are found here in about 3/4 of samples. The site has stable macro populations. (2000-2023)
		Spring Avg. since 2020	12.0	6.0	1.0	4.1			
		Fall 2023	Not sampled				Average since 2020	1.0	
		Fall Avg. since 2020	15.5	5.0	1.5	4.4			
9	Fleming Creek: Botanical Gardens	Spring 2023	14	5	1	5.8, Fair	Winter 2023	1.0	This site is remaining steady with its insect community, though the site floods readily and often can't be sampled. Winter Stoneflies have a strong population here. The habitat is diverse and healthy. (1993-2023)
		Spring Avg. since 2020	14.0	5.0	1.0	5.8, Fair			
		Fall 2023	16	6	2	4.3, V. Good	Average since 2020	1.3	
		Fall Avg. since 2020	13.0	5.3	1.7	4.1, Very Good			
79	Mill Creek: Mill Creek Park	Spring 2023	Not sampled				Winter 2023	2.0	Samples have been getting better over time-- a slow crawl upwards, and not significant as of yet. Fall 2023 received a low WQR score because of a huge amount of water boatman pulled from site (this is is a possible sampling artifact). Winter stoneflies are always found here. (2003-2023).
		Spring Avg. since 2020	15.0	8.0	3.0	4.1			
		Fall 2023	14	4	1	6.9	Average since 2020	2.0	
		Fall Avg. since 2020	14.0	5.0	1.5	5.1			
11	Fleming Creek: Parker Mill County Park	Spring 2023	No sample				Winter 2023	1.0	Since 2009, we have been finding 1-2 sensitive families here in the fall where there was once none. Starting in 2018, there was enough data to confirm this as statistically significant. Spring sampling has proven to be quite difficult in recent years with flood impeding the collection process. Winter stoneflies are consistently present (1993-2023).
		Spring Avg. since 2020	No valid samples						
		Fall 2023	No sample				Average since 2020	1.0	
		Fall Avg. since 2020	12.5	5.0	2.0	3.9, V.Good			
96	Mill Creek: Parker Rd	Spring 2023	10	5	1	5.1	Winter 2023	0.0	No significant changes over time. Winter stoneflies are never found here (2013-2023).
		Spring Avg. since 2020	10.5	5.5	1.5	5.0			
		Fall 2023	Not sampled				Average since 2020	0.0	
		Fall Avg. since 2020	18.0	3.0	0.0	5.1			
14	Woods Creek: L Huron Metropark	Spring 2023	13	5	2	5.6, Fair	Winter 2023	2.0	Woods Creek is unchanging, statistically. Several teams have pulled poor samples from here recently though, so HRWC is watching the site carefully
		Spring Avg. since 2020	11.0	4.0	1.5	5.2, Good			
		Fall 2023	13	5	0	4.8, Good	Average	1.3	

		Fall Avg. since 2020	11.3	3.3	0.3	4.8, Good	since 2020		to be sure it isn't declining. (1997-2023).
61	Huron River: Island Park	Spring 2023	9	6	1	5.2	Winter 2023	2.0	Fall sensitive families are significantly increasing; all of the other metrics are stable. The winter stoneflies here are abundant and consistent. (2001-2023)
		Spring Avg. since 2020	9.5	6.0	1.0	5.2			
		Fall 2023	14	6	0	4.7	Average since 2020	2.0	
		Fall Avg. since 2020	14.0	6.3	1.7	4.4			
80	Mill Creek: Shield Rd	Spring 2023	10	5	1	5.2	Winter 2023	2.0	There have been no significant changes over time. Winter stoneflies are nearly always found here (2001-2023).
		Spring Avg. since 2020	9.5	5.5	1.0	4.6			
		Fall 2023	14	3	0	4.0	Average since 2020	1.5	
		Fall Avg. since 2020	15.0	4.5	1.5	4.1			
2	Boyden Creek: Delhi	Spring 2023	Not sampled				Winter 2023	2.0	The overall trend for most of the parameters is stable though the diversity this year was down. Fall sensitive families are significantly improving (we regularly find at least 1). Winter stoneflies are found here consistently. The habitat is healthy and diverse. (1994-2023).
		Spring Avg. since 2020	14.5	4.0	0.5	3.7, V. Good			
		Fall 2023	16	3	0	5.5, Fair	Average since 2020	1.3	
		Fall Avg. since 2020	9.0	6.0	1.0	5.1, Good			
31	Mill Creek: Fletcher Road	Spring 2023	12	6	0	4.9, Good	Winter 2023	0.0	Fall families have significantly increased over time (10--> approx 15) Winter stoneflies, however, have disappeared from here since 2015. (1993-2023)
		Spring Avg. since 2020	12.0	6.0	3.0	4.9, Good			
		Fall 2023	13	3	0	5.3, Good	Average since 2020	0.0	
		Fall Avg. since 2020	15.0	3.5	0.0	5.4, Good			
33	Mill Creek: Jackson Road	Spring 2023	Not Sampled				Winter 2023		Spring total families are significantly increasing; all of the other metrics are stable. The winter stoneflies here are abundant and consistent. (1996-2022)
		Spring Avg. since 2020	16.0	6.0	2.0	4.7, Good			
		Fall 2023	11	3	0	4.8, Good	Average since 2020		
		Fall Avg. since 2020	12.0	3.5	0.5	5.2, Good			
55	Mill Creek: Manchester Rd	Spring 2023	6	3	1	5.2	Winter 2023	2.0	There have been no significant changes over time, though this Spring sample was really down in abundance and diversity. Winter stoneflies are nearly always found here. (1999-2023).
		Spring Avg. since 2020	8.0	4.0	1.5	4.8			
		Fall 2023	11	2	3	4.7	Average since 2020	2.0	
		Fall Avg. since 2020	11.0	2.5	2.0	4.6			
57	Mill Creek: Klinger Road	Spring 2023	7	3	1	5.4	Winter 2023	2.0	Fall EPT families are up, otherwise this site has mostly stayed stable. Winter stoneflies are regularly found. (1999-2023).
		Spring Avg. since 2020	7.0	3.0	1.0	5.4			
		Fall 2023	12	4	1	4.2	Average since 2020	2.0	
		Fall Avg. since 2020	12.5	3.5	0.5	5.3			
20	Honey Creek (S): Wagner Road	Spring 2023	No sample				Winter 2023	0.0	The fall sensitive families are significantly declining over time. Most of the other metrics are slightly and non-significantly declining. Stoneflies disappeared from 2015 to 2019, came back 2020-2022, and went missing again in 2023. Overall, this site does not seem to be in active decline like it was three years ago but remains one to watch (1993-2023).
		Spring Avg. since 2020	11.0	5.0	4.0	4.7, Good			
		Fall 2023	No sample				Average since 2020	1.0	
		Fall Avg. since 2020	10.0	4.0	1.0	4.3, V. Good			
32	Mill Creek: Ivey Rd	Spring 2023	Not sampled				Winter 2023	0.0	There have been no significant changes over time, although spring and fall samples are trending downwards, a result that is not yet significant. Stonefly populations are decreasing as well, also not significantly. This site bears watching. (1993-2023).
		Spring Avg. since 2020	15.0	7.0	2.0	4.4, V. Good			
		Fall 2023	Not sampled				Average since 2020	0.7	
		Fall Avg. since 2020	13.0	5.0	2.0	5.3, Good			
42	Traver Creek: Broadway Ave	Spring 2023	Not sampled				Winter 2023	1.0	No significant changes over time (1993-2023). While degraded, this is one of the healthier urban stream we monitor. Stoneflies can be found here regularly.
		Spring Avg. since 2020	No valid samples						
		Fall 2023	13.0	4.0	0.0	5.2	Average since	1.0	
		Fall Avg.	13.0	4.0	0.0	5.2			

		since 2020					2020		
34	Letts Creek: M-52	Spring 2023	Not Sampled				Winter 2023	0.0	This site is declining significantly in fall EPT families. All other metrics are holding steady. Stoneflies are found consistently normally, but were absent in 2023. (1993-2023)
		Spring Avg. since 2020	11.0	3.0	0.0	5.9, Fair			
		Fall 2023	Not Sampled				Average since 2020	1.0	
		Fall Avg. since 2020	12.0	2.5	0.0	6.2, Fair			
24	Huron River: Cross Street	Spring 2023	5	2	0	6.0, Fair	Winter 2023	0.0	No significant changes over time. Winter stoneflies are found here in approximately 50% of samples (1997-2023).
		Spring Avg. since 2020	6.7	2.7	0.3	5.9			
		Fall 2023	8	5	0	4.5, V. Good	Average since 2020	1.0	
		Fall Avg. since 2020	11.0	5.5	1.5	4.4, V. Good			
18	Honey Creek (S): Jackson Road	Spring 2023	Sample rejected for low abundance				Winter 2023	1.0	Sensitive families have declined in spring samples, from approximately 2 in the early 2000s to 0 in recent years. (1993-2018) No sensitive families have been found in fall or spring since 2009. However, winter stoneflies, which disappeared in 2009, made a comeback and have been seen since 2017. This site has seen a lot of changes over time; through crashes and recoveries. Overall, it isn't too much different now than it was in 1993. (1993-2023).
		Spring Avg. since 2020	No valid samples						
		Fall 2023	9	2	0	5.1, Good	Average since 2020	1.0	
		Fall Avg. since 2020	8.5	2.0	0.0	4.7, Good			
27	Malletts Creek: Chalmers Road	Spring 2023	7	2	0	6.0, Fair	Winter 2023	No sample	Long term, spring and fall samples have shown improvement over time (1994-2023). That being said, the stream is still in a high urban environment and overall is considered a poor stream.
		Spring Avg. since 2020	8.0	2.0	0.0	5.6, Fair			
		Fall 2023	11	3	0	4.3, V. Good	Average since 2020	0.0	
		Fall Avg. since 2020	8.7	3.0	0.0	4.5, V. Good			
41	Swift Run: Shetland Drive	Spring 2023	No sample				Winter 2023	No sample	No significant changes over time. Winter stoneflies are never found here (1992-2023).
		Spring Avg. since 2020	4.0	1.0	0.0	5.1			
		Fall 2023	No sample				Average since 2020	0.0	
		Fall Avg. since 2020	6.5	1.5	0.0	5.4			
35	Millers Creek: Glazier Way	Spring 2023	10	1	0	5.8, Fair	Winter 2023	No sample	No significant changes over time. This site is highly degrade; stoneflies have never been found here (1993-2023).
		Spring Avg. since 2020	10	1	0	5.8, Fair			
		Fall 2023	8	1	0	5.5, Good	Average since 2020	0.0	
		Fall Avg. since 2020	8.5	1.0	0.0	5.4, Good			

Rouge River

The Rouge River does not meet state and federal water quality standards due to excess nutrient concentrations and *E. coli* pathogen levels. A fish consumption advisory was issued for polychlorinated biphenyls that exceed state levels. The following benthic monitoring information was compiled by the FOTR for the watershed, not exclusive to UMD.

The FOTR Benthic Macroinvertebrate Monitoring Program Fall 2022 Report covers benthic macroinvertebrate monitoring at 44 sites on the Rouge River, tributaries and branches. Of the 44 sites sampled in fall 2023, the average Stream Quality Index (SQI) was fair (30). Sites averaged 13 taxa and 2 EPT (mayfly, stonefly, and caddisfly families). One (1) site had an excellent SQI (Johnson Creek). Fourteen (14) sites rated good, 25 sites were fair, and four (4) sites scored poor. In comparison to past years, 77% of sites were stable, more than last year (2022). Fourteen percent (14%) were improving and 9% were declining.

The Rouge River Benthic Monitoring Program Spring 2024 Report covers benthic macroinvertebrate monitoring at 34 sites. Stoneflies were found at 14 of the 34 sites (41%). All were found on the Lower, Middle and Upper branches. All but one of the sites had slender winter stoneflies (Capnids-family Capniidae). One (1) Perlodid (family Perlodidae) was observed at Johnson Creek.

The 2024 chloride levels varied by branch. The Lower branch sites, which include Fellows and Fowler Creeks, were below 150 ppm, with the exception of two sites in Fellows Creek: Plymouth Township (Fel1) and near the Faith Baptist Church in Canton (LR-9). In the Middle branch, all the Johnson Creek sites were below 100 ppm but downstream in the Middle Branch levels rose above 150 ppm: Northville Recreation Area (MR-1 and Mid 1), two sites downstream of Waterford Pond (MR-20 and MR-2a) and downstream on Phoenix Lake (MR-18). Sites in Tonquish Creek (Ton1, Ton1/2, MR-14, and MR-24) were all above 150 ppm and the MR-24 site at Lion's Park had an extremely high level (620 ppm). All three Upper branch sites were above 320 ppm (toxic level): Bell Creek (Bell2) at Schoolcraft College, Minnow Pond (Min4) at 14 mile in Farmington Hills, and Up2 at Shiawasee Park. Both the Bell2 and Up2 sites had readings beyond (higher) that of the highest level on the strip.

In addition to Salt Watch, Friends of the Rouge Bug Hunt volunteers have also been testing for nitrates in the past year through the Izaak Walton League's Nitrate Watch program. No elevated levels of nitrate were found at any Stonefly sites this year. Levels ranged from 0 ppm-3 ppm.

Flint River

The Flint River does not meet state and federal water quality standards due to fish consumption advisory for polychlorinated biphenyls and/or mercury that exceed state levels. The Flint River GREEN citizen-science based program provides information on water quality for the entire Flint River watershed, not exclusive to UMF, through the use of water quality index ratings.

Flint River Green Report webpage and resources: https://www.flintrivergreen.org/

Here is a link to the Flint River Watershed Coalition Environmental Monitoring data: https://www.flintriver.org/environmental-monitoring

Typically, the Flint River GREEN program provides water quality index (WQI) ratings for 20 testing locations within the Flint River watershed. The WQI ratings (0-100) are based on the following field tests/parameters: dissolved oxygen, fecal coliform, BOD, pH, nitrates, turbidity, total solids, temperature, and total phosphate. Spring 2024 sampling events did occur and indicated that the closest upstream location relative to the UMF campus, Stepping Stones, received an average weighted WQI of 73, indicating "good" water quality. The data is posted on the Flint River Green test data web site (http://www.flintrivergreen.org/test-data/).

The UMF Biology Department is heading up the Flint River Ecology Study, led by Dr. Heather Dawson. The project is funded by the C.S. Mott Foundation to collect water, river sediment, and fish samples at six locations on the Flint River. Some sites are in urban locations and some in rural areas, with the urban sites being situated near the dam as well as the 2022 Lockhart Chemical Spill.
Story: https://midmichigannow.com/news/state/u-of-m-flint-professor-leads-her-students-in-research-assessing-the-health-of-flint-river

4) Data & Results –

Provide a summary of all information collected and analyzed, including monitoring data, if any, during the annual reporting cycle.

UMAA partners with the HRWC for monitoring data collection and analysis. Updated monitoring data is described in the Water Quality Assessment Section, above.

5) Upcoming Activities –

Provide a summary of the storm water activities to be implemented during the next annual reporting cycle. Include schedules for elimination of any illicit connections identified but not disconnected prior to annual report submittal.

The U-M will continue its on-going programs including:

Public Education and Outreach:

- Continue to develop/add additional brochures and guidelines (print or electronic) to fill any gaps in the topics needed to meet the permit requirements.
- Provide storm water educational messages to members of the campus community and new employees.
- Continue to update the UMAA, UMD, and UMF storm water websites.
- Continue to review website information dissemination and coordination strategy (all campuses) so that it can reach the target audiences.
- Install additional storm water curb markers, with the dump no waste, flows to river slogan.
- Continue to provide information on household hazardous waste disposal options in the area via the UMAA, UMD, and UMF storm water websites.
- Continue EHS-AA sanitarian work with kitchen and food vendors on campus to ensure proper waste management and disposal methods are used.
- Continue work with U-M staff to improve waste handling procedures.
- Work with Athletics to request continued storm water educational announcements at the U-M home football games and to request use of the stadium display boards.

- Continue to evaluate opportunities to contribute articles to newsletters for the U-M Facilities and Operations website.

- UMD includes storm water education as a topic in periodic, new employee orientation sessions and will continue implementing a notification program that provides all new hires with information on the required storm water training and a link to the UMD storm water website.

- UMF storm water bookmarks are distributed to individuals at the UMF bookstore, library, and information desks.

- EHS-F coordinates Storm Water and Spill Prevention training for key staff on campus using our online training modules and posting related storm water and environmental information on bulletin boards. This annual training typically occurs in late summer and early fall.

- EHS-F will continue to work with facilities and food vendors to monitor and improve management of grease from our food venders for off-site recycling while still protecting storm drains.

Public Involvement/Participation:

- Continue to work with the Millers Creek Action Team, Mallets Creek Coordinating Committee, Middle Huron Initiative/Partners and other local watershed/creek groups to identify opportunities for joint activities and outcomes in support of permit requirements.

- Continue to participate in the *E.coli* TMDL implementation plan.

- Continue to offer opportunities for environmental stewardship on campus.

- Continue to update the EHS-AA website, which contains the U-M Storm Water Management Program Plan as well as information for use by students, faculty, staff and the surrounding community.

- Continue to post the U-M NPDES reports on the U-M EHS-AA website to heighten community awareness of storm water management activities on campus.

- UMD will continue to be active partners with FOTR and the ARC.

- UMD will continue to update the EHS-D website, which contains the U-M Storm Water Management Program Plan as well as information for use by students, faculty, staff and the surrounding community.

- UMF will continue to work with local Flint River organizations including Flint River Watershed Coalition, the Genesee County Parks, and the City of Flint. The latest project involves participating in planning discussions of the Flint River Restoration project in downtown Flint. A phased approach is being planned with the initial construction now anticipated in 2024.

Illicit Discharge Elimination Program:

- Perform/continue dry weather field screening of outfalls per the EGLE-approved, modified IDEP Dry Weather Screening Procedure and per the SWMPP as needed. Initial dry weather screening of the U-M outfalls, which discharge to surface Waters of the State or that have a direct discharge to retention/detention basins, was conducted within the required timeline.

- Follow-up on potential illicit discharges to the storm water system and make repairs as required.

- Identified illicit discharges will be prioritized for correction according to their potential impacts to water quality. Cross connections will take priority; cooling tower discharges will be prioritized based on the frequency of discharge and will be redirected to the sanitary sewer as building improvements and renovations are undertaken.

- Continue to encourage the campus community to report illicit discharges and spills to EHS and the DPSS so appropriate measures can be taken by the 24-hour Emergency Response Team to correct issues that may impact storm water quality.

Post Construction Storm Water Management:

- Review storm water management plans for new construction and large renovation projects to ensure compliance with applicable post-construction storm water management requirements.

- Continue to work with EGLE for approval of project post-construction storm water management plans that seek to utilize detention in lieu when infiltration is not possible or advised.

- Work on implementation of storm water management basin improvement and maintenance projects to improve detention capacity, retention/infiltration, and additional Best Management Practice usage.

Construction Storm Water Runoff Control:

- Continue construction site storm water protection BMPs.

- Training of key personnel to maintain certification as construction site storm water operators.

- Training of key personnel to maintain certification as soil erosion and sedimentation control operators.

- Continue EHS review of site plans. Continue to make recommendations to improve storm water runoff quality in and around construction projects.

- Notify the Department/Agency, as required, for sediment discharges to surface waters.

Pollution Prevention/Good Housekeeping for University Operations:

- Continue to implement BMPs to control dust and suspended solids in runoff from paved roads and parking lots.
- Continue cleaning of storm water inlets, lines, and detention basins, as required.
- Continue tracking the TSS reduction for paved surfaces with a goal of reducing TSS loading by 25% as compared to annual loading with no suspended solids controls. Update TSS reduction strategy if needed.
- Continue salt use reduction strategies and alternative product usage to improve storm water runoff quality.
- Continue to implement BMPs to improve storm water discharge quality.
- Continue to update Facilities & Operations Employee training to reinforce good housekeeping procedures and proper waste management.
- Continue to have pesticide and fertilizer applicators on campus trained and certified in appropriate application amounts and techniques.
- Provide annual SWPPP training for all fleet maintenance and storage yards/facilities at U-M and provide training to applicable storm water management teams at the facilities either in person or electronically.
- Continue the education program and dissemination strategy for U-M staff involved in fertilization of turf grass at U-M. Continue providing turf grass fertilization education for appropriate U-M staff and contractors.
- Develop/add additional topics, web links, brochures, guidelines, posters, etc. to fill any gaps in the topics needed to meet the permit requirements and continue the training plan.

6) Best Management Practice Changes –

Describe any planned changes in identified Best Management Practices or Measurable Goals for any of the minimum measures.

No revisions are proposed at this time.

7) Notice of Changes in Reliance on Permitted Drainage System Operators –

Describe any changes in the need to rely on other permitted drainage system operators to satisfy the terms and conditions of this permit, as defined in Part I.C.1.d.

No revisions are proposed at this time.

8) Drainage System Changes –

Provide an update on areas added to the drainage system due to annexation or other statutory processes (if applicable).

- U-M has acquired the following properties during the reporting period:
  - Numerous parcels on John St., Marshall Ct., E. Madison St., S. Division St., S. Fifth Ave. (Ann Arbor)
  - 2130 Grand River Ave., Detroit, MI
  - 3520 Green Ct. (Ann Arbor)

9) Revised Fiscal Analysis –

Provide a summary of revisions, if necessary, to the fiscal analysis reported during the previous permit, pursuant to permit application requirements at 40 CFR 122.26(d)(2)(vi).

No revisions are proposed at this time.

10) Annual Budget –

The expenditures and budget for all campuses are shown in Table 15.

Table 15 Annual Expenditures and Proposed Budget

	TOTAL		
ACTIVITY	**2023-2024 U-M LABOR AND MATERIALS**	**2023-2024 CONTRACTOR COST OR DIRECT PAYMENTS**	**2024-2025 BUDGET ESTIMATE**
Permit Administration	$276,200	$1,500	$278,700
Storm and Sanitary Repair	$309,300	$194,200	$1,470,000
Construction Site Soil Erosion Control[1] (includes post-construction controls)	$148,000	$586,449	$1,060,057
Storm Water Management Basin Maintenance	$26,843	$89,500	$137,000
Storm Water Education Program	$20,057	$0	$21,500
Catch Basin Maintenance and Cleaning Program	$55,828	$50,500	$506,000
Street Sweeping Program	$12,545	$5,000	$60,000
Waste Management-Litter Collection & Disposal	$1,013,588	$967	$1,896,998
Parking Structure and Lot Cleaning Program	$1,455,540	$59,516	$1, 582,469
Paid Storm Water Utility Charges to Respective City	$2,168,108	$0	$2,403,105
EHS Spill Response Activity	*[2]	*[2]	*[2]
Architecture, Engineering and Construction	*[2]	*[2]	*[2]
TOTALS	***$5,486,009***	***$987,632***	***$9,415,829***

Footnotes: 1 - Many construction and renovation projects do not have separate tracking of SESC costs as they are built into the contract as a whole. Therefore, the expenditures for these line items are higher than shown. Post-construction BMP installation costs are included. 2 - These departments and divisions have moderate stormwater costs and are not tracked separately by the University budget system.